



## Algebra-Based Physics

5-Year Dynamic Market Report and Adoption Volatility Analysis

2019

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# Executive Summary

## Key Market Dynamics

- ◆ Overall market enrollment and technology enrollment has increased at about the same rate over the past 5 years (see Chart 1).
- ◆ **Pearson's market share has declined from 57% to 51.8% since 2014/15. During this period OpenStax increased its share from 2.7% to 12.8%, moving to #3 ahead of Cengage (see Table 1, Chart 2).**
- ◆ Pearson remains dominant, outselling #2 Wiley by more than 3 to 1.
- ◆ Sapling gained 3% market share within the past year, followed by WileyPLUS and Expert TA, up 2.6% and 1.9%, respectively (see Table 2, Chart 4a).

## Technology

231 of 317 schools (73%) teaching algebra-based physics within the past year have adopted a technology component. This number does not necessarily indicate that all students opt for (activate) the technology component, but it is listed among course materials.

Over half the market uses Mastering Physics, which outsells #2 WebAssign by more than 2 to 1. Both market leaders have fallen off over the past year, down 3.6% and 2.5% respectively while WileyPLUS, Sapling and Expert TA have made gains of 2.6%, 3.0% and 1.9%. **Sapling's growth is** due in part to Freeman transitioning from FlipIT, which dropped 2.1% within the past year (see Table 2).

Between Fall 2014 and Spring 2019, 58 schools (19%) changed their technology platform at least once, 11 schools changes more than once.

Recent large and notable technology changes include

U South Florida	Mastering to Sapling (2,600)
U Florida	Expert TA to Mastering (2,500)
Virginia Tech	WebAssign to WileyPLUS (1,600)
Penn State	WebAssign to Expert TA (1,500)
Cal Poly Pomona	Mastering to Expert TA (1,300)
Northern Ariona	Mastering to WileyPLUS (1,300)
UC Boulder	WileyPLUS to Sapling (1,100)

Tracking adoption wins vs losses, Mastering gained 22 including 13 vs WebAssign, but lost 26 adoptions (7 to WebAssign) for a net -4 change. WebAssign gained just 11 adoptions and lost 26 for a net -15 change. Expert TA had the best performance, picking up 10 adoptions including 4 from Mastering and 3 from WebAssign while losing only one adoption. Sapling also made strong gains, with 9 adoptions including 4 from Mastering and 3 from Top Hat, while losing just 2.

With respect to campuses, Mastering increased its base from 125 to 135 schools tracked by NAVSTEM **but then dropped down to 131 over past year. However Pearson's technology** penetration rate increased to a 5-year high 71% of its adoptions (as its base also declined within the past year). WebAssign lost 6 campuses, dropping to a 5-year low 53 while Cengage's technology penetration rate also fell from 72% to 69% of its adoption base.

Sapling went from 7 to 12 campuses within the past year while Expert TA increased its base from 9 to 14 campuses.

## *Traditional & OER Course Materials*

### *Part A: Market Share*

Pearson publishes 6 of the 14 titles tracked in this report and currently has 3 of the top 5 in Knight, Giancoli and Walker. With the exception of Openstax (more on that below), Knight has been the strongest title, picking up market share year-over-year since 2014/15. Giancoli and Walker have been vulnerable and currently sit a 5-year lows for F18/S19 following several years of market share declines.

OpenStax has outperformed the field over the past five years, gaining 2%+ each of the past 4 years and moving ahead of both Giancoli and Walker within the past year, currently just .6% behind #2 Cutnell.

Cutnell 11e (Wiley), published in January 2018, finally reversed 5 years of market share declines with a modest .7% gain for F18/S19. Serway (Cengage) also gained .7% over the past year, bouncing back from a 5-year low 9.4% during F17/S18.

Freedman (WH Freeman/Macmillan) outperformed the market within the past year, benefitting from a takeaway with Sapling vs Knight/Mastering at U South Florida contributing to a 2.1% market share gain.

### *Part B: Volatility Trends*

Just 41% of the market has changed their Algebra Based Physics text for at least one track over the past 5 years; only 15% of the market has changed more than once over the past five years, 33% of the time returning to their original text.

With regard to specific titles/products

- Recent OpenStax adoptions include Cal Poly Pomona with Expert TA vs Walker/Mastering (1,900), University of Pittsburgh with Sapling vs Cutnell (1,500), and Texas Tech vs Walker/Mastering (1,000).
- While OpenStax continues to build its base, it is not invulnerable. Recent losses include:
  - o U Florida with Expert TA to Knight/Mastering (2,500)
  - o U Waterloo to Serway/WebAssign (1,800)
  - o Kansas State with Sapling to Ruskell/Sapling (1,400)
- The majority (65%) of OpenStax adoptions have no technology component. While recently OpenStax has teamed up with Expert TA and Sapling, historically WebAssign has been the most common pairing, about half the time.
- From the Volatility Grid (Table B3)
  - o OpenStax was the strongest competitor, taking 39 adoptions and losing 17 for a net +22 gain since its launch in 2014. OpenStax has been most successful vs Serway (8) and Giancoli (8).
  - o Knight was the only other title with strong positive gains (+11). With the exception of Etkina, the remainder of the Pearson list had net minus adoptions over the 5-year period.
  - o Giancoli was the weakest competitor, with 9 wins to 17 losses (net -8).
- 56% of OpenStax adoptions over 5 years replaced a Pearson text.
- Within the past year, OpenStax has gone from #1 to #3 in brand loyalty, tied with Cutnell.

## METHODOLOGY

The NAVSTEM Market Database covers approximately 65% of the total 4-year market in the US and Canada. This analysis is based on a study of more than 8,000 adoption records over a 5 year period at 324 **4-year universities in the US and Canada**. A **'college physics' adoption** is defined as any course using any version of an algebra-based physics textbook. This included multiple course tracks and every course section within a track.

Prior to calculating market shares and market volatility, we completed an intensive hand-analysis for every school and corrected enrollment anomalies, data entry errors, and correctly identified source text/versions for custom adoptions, as well as technology components. The end result was a very clean data set upon which to base our analysis.

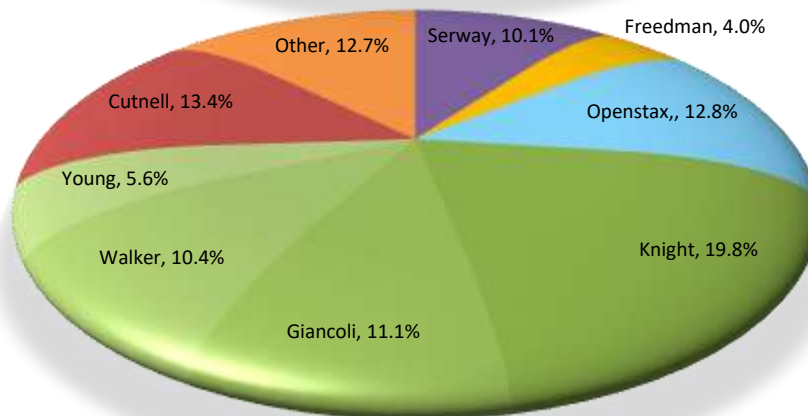
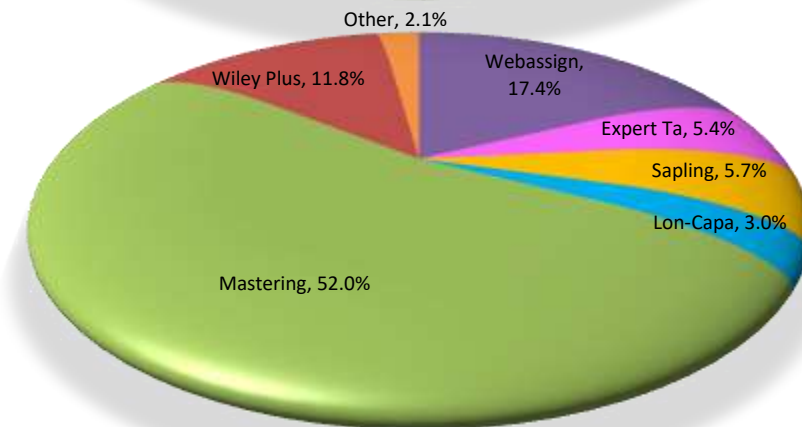
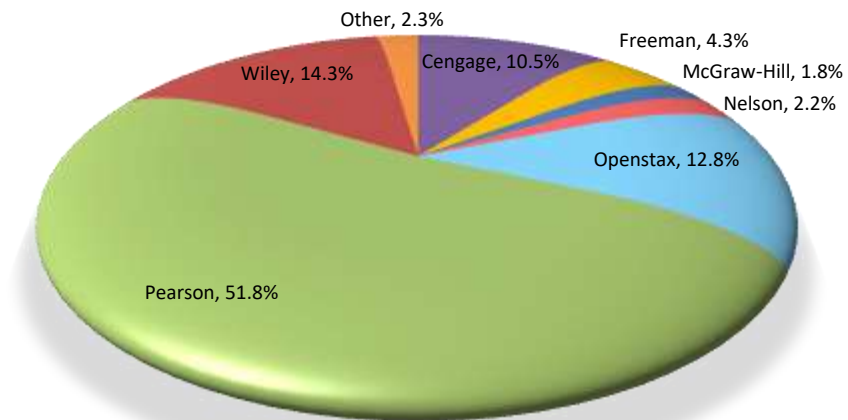
Part A of this report consists of multiple market share analyses. The enrollment numbers on the enclosed charts are just that, enrollments. They do not indicate text sales (new or used) but rather number of students in a course where a particular course text or technology component was assigned. In some cases a student may buy 1 textbook for a multiple course sequence. So while the totals may not be useful for traditional textbook sales forecasting, they provide a more **accurate indication of sales potential for the increasingly important "\$ per student" pricing model** for technology components.

Part B of this report tracks change behavior/adoption volatility on an adoption-by-adoption basis, including multiple course tracks within each school. This includes both text and technology component changes, as well as schools that have recently dropped their technology component. For each school we identify the number of course tracks and number of changes for both textbook and technology, provide details on specific changes, and calculate annual total enrollment for all tracks/sections. The results are rolled up to provide an overall measure of volatility for the market, as well as metrics on change behavior between publishers and specific titles and tech components.

In addition to the above mentioned items, additional charts/graphs and analysis are listed in the Table of Contents.

## PART A: MARKET SIZE & MARKET SHARE

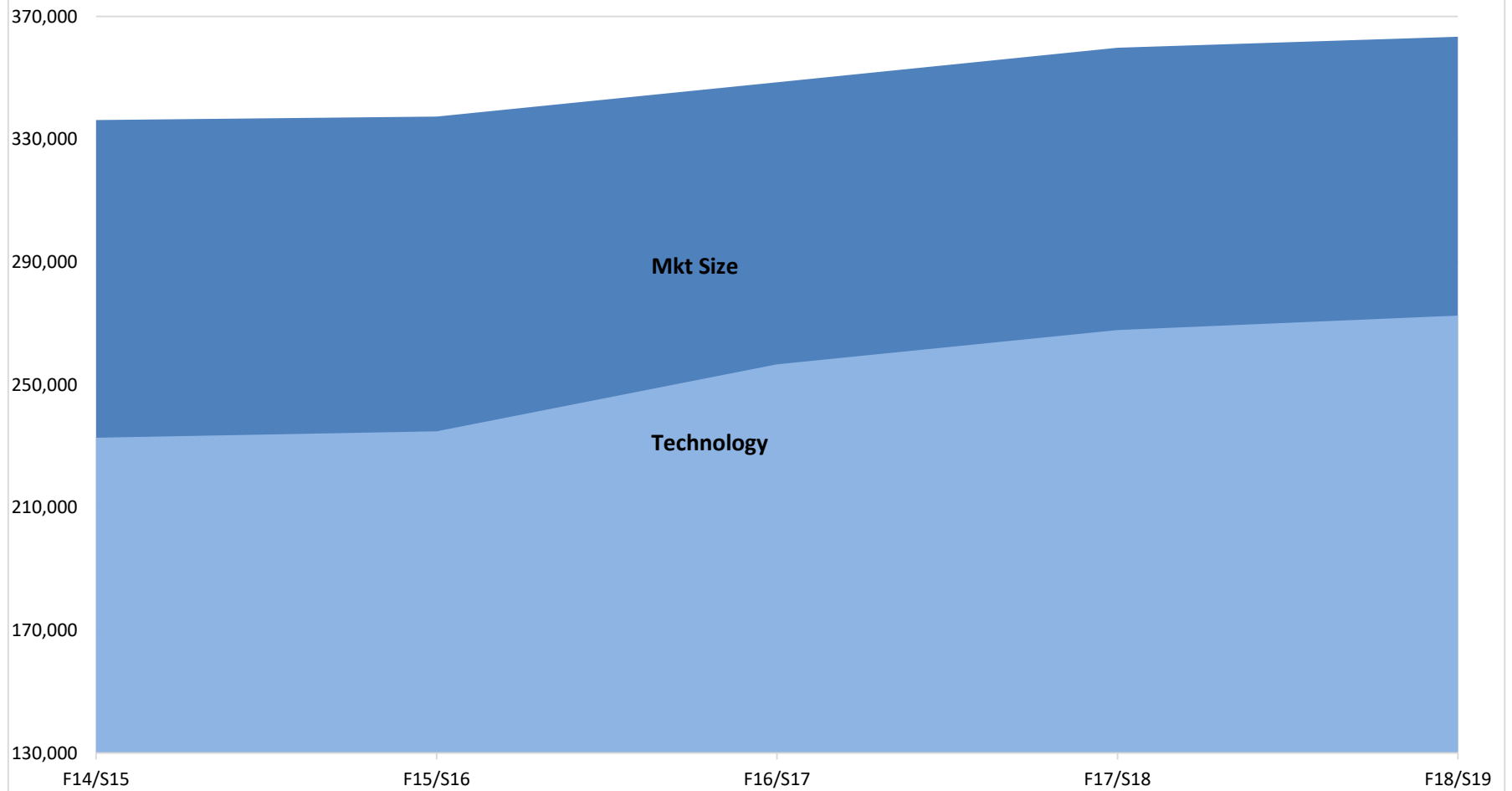
## Current Year Market Share



### Key Data Points

Current Market Size (4 Yr)	363,000
Market Growth/Decline	↑ 1%
Average Course Size	142
Leading Publisher	Pearson
Market Leading Text	Knight 4e, '19 (Pearson)
Market Leading Technology	Pearson, Mastering
Technology Penetration	73%

**Chart 1**  
**Algebra-Based Physics**  
**Estimated Market Size & Tech Segment by Academic Year**  
**Fall 2014 to Spring 2019**



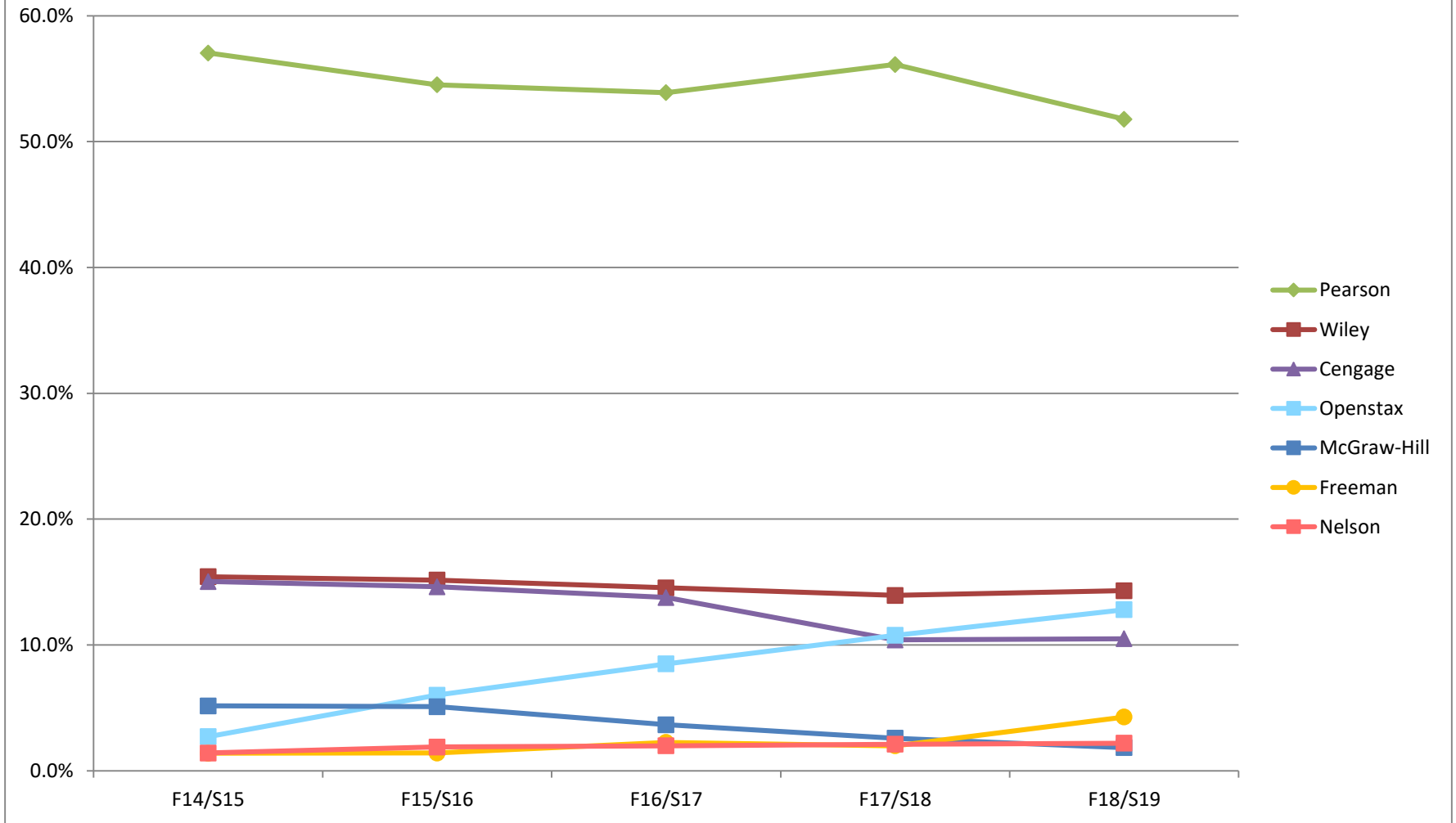


**TABLE 1**  
**Algebra-Based Physics**  
**Annual Publisher Market Share**  
**Fall 2014 to Spring 2019**

	5-YEAR TOTALS		F14/S15		F15/S16		F16/S17		F17/S18		F18/S19	
Publisher	Enroll	%	Enroll	%	Enroll	%	Enroll	%	Enroll	%	Enroll	%
Pearson	619,950	54.6%	124,681	57.0%	119,562	54.5%	122,107	53.9%	131,272	56.1%	122,328	51.8%
Wiley	166,331	14.7%	33,717	15.4%	33,250	15.2%	32,940	14.5%	32,599	13.9%	33,825	14.3%
Cengage	145,244	12.8%	32,868	15.0%	32,072	14.6%	31,197	13.8%	24,321	10.4%	24,786	10.5%
Openstax	93,794	8.3%	5,930	2.7%	13,190	6.0%	19,260	8.5%	25,172	10.8%	30,242	12.8%
McGraw-Hill	41,163	3.6%	11,276	5.2%	11,178	5.1%	8,289	3.7%	6,064	2.6%	4,356	1.8%
Freeman	26,019	2.3%	3,045	1.4%	3,097	1.4%	5,124	2.3%	4,645	2.0%	10,108	4.3%
Nelson	21,889	1.9%	3,100	1.4%	4,162	1.9%	4,496	2.0%	4,936	2.1%	5,195	2.2%
Other	20,166	1.8%	3,947	1.8%	2,813	1.3%	3,156	1.4%	4,857	2.1%	5,393	2.3%
Totals	1,134,556	100%	218,564	100%	219,324	100%	226,569	100%	233,866	100%	236,233	100%

\*The above numbers are actual enrollments tracked by NAVSTEM, which represent 65% of the total 4-year market.

**Chart 2**  
**Algebra-Based Physics**  
**Annual Publisher Market Share**



**Chart 2a**  
**Algebra-Based Physics**  
**Annual Publisher Market Share excluding Pearson**

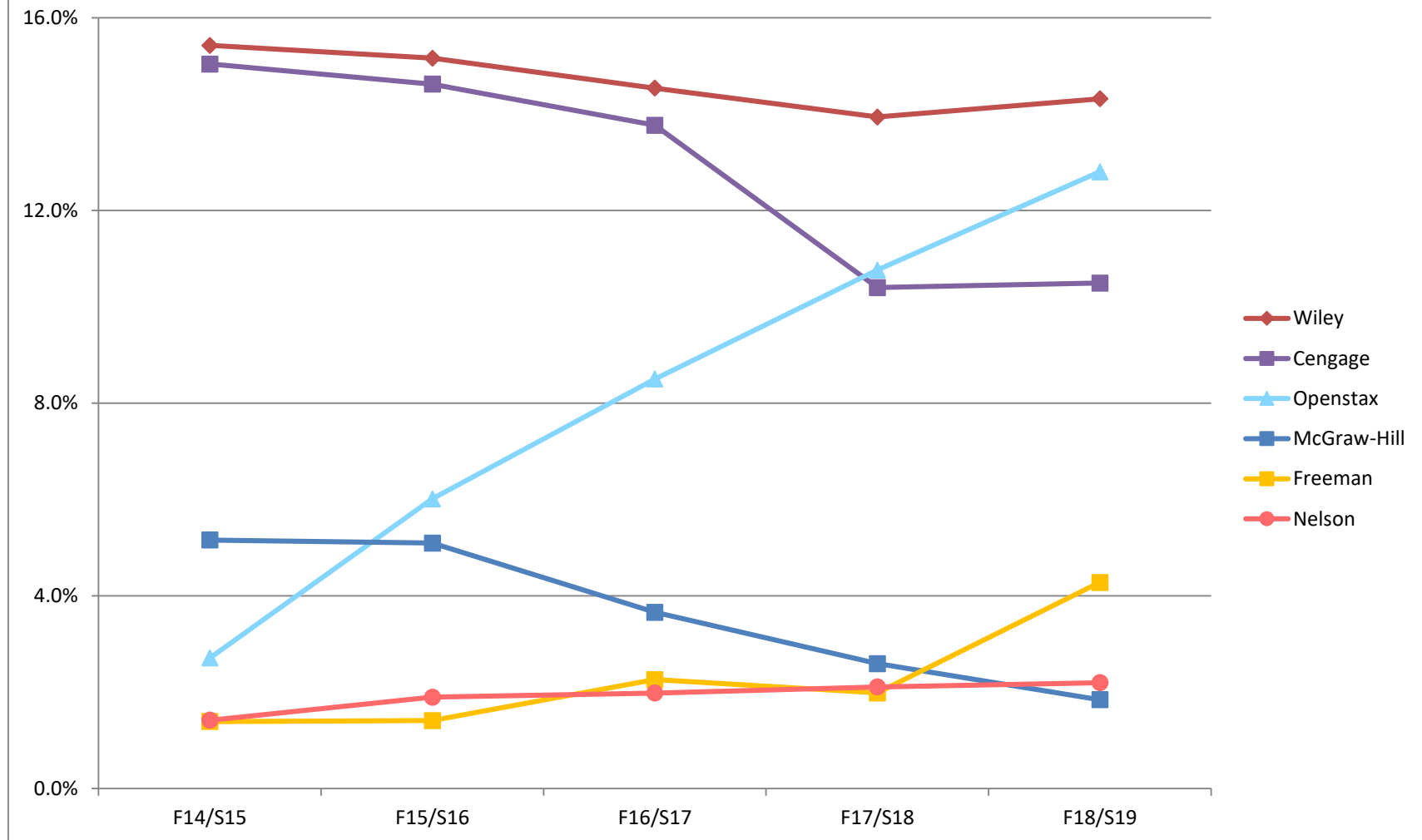
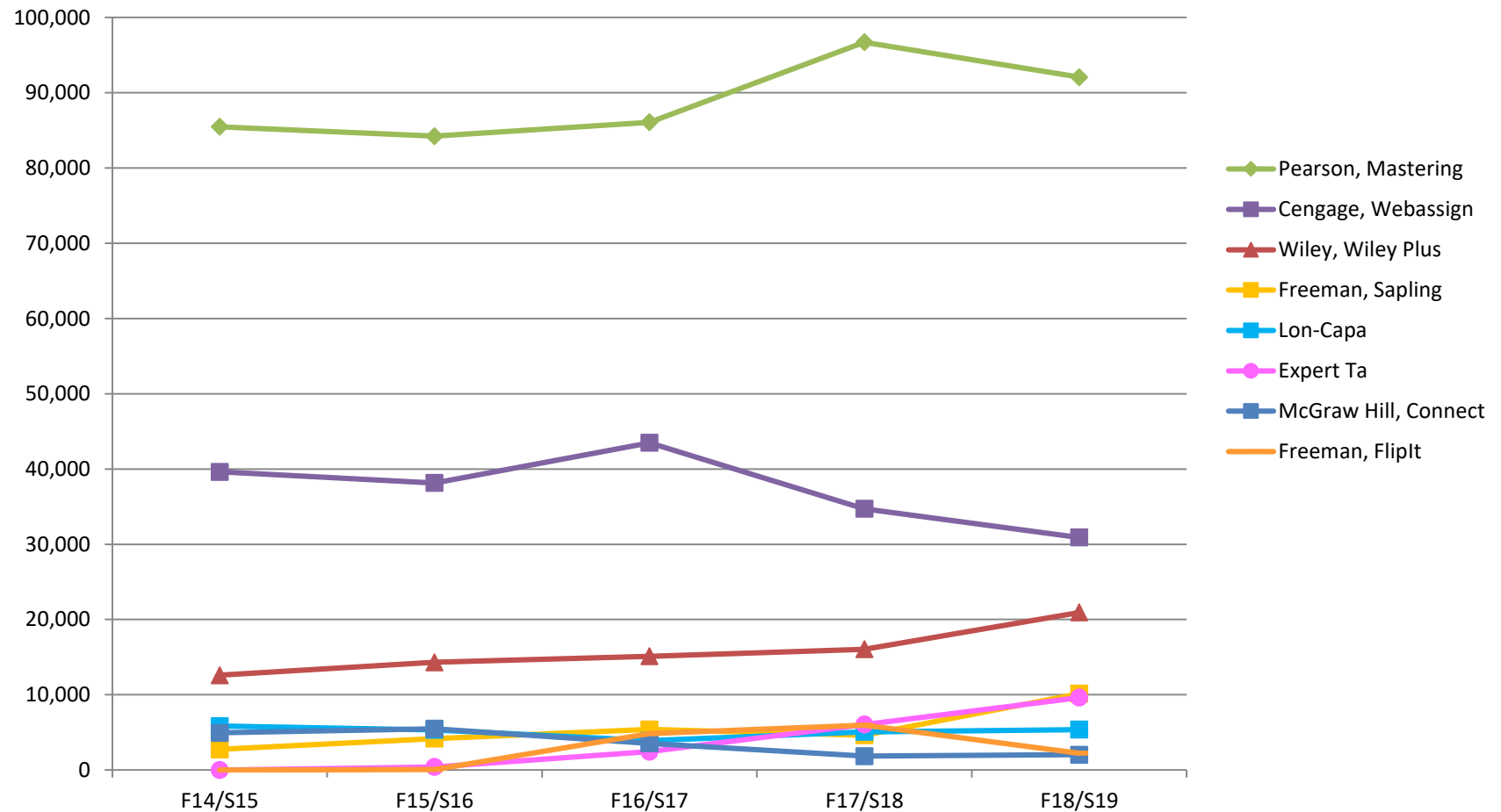


TABLE 2  
Algebra-Based Physics  
Annual Technology Market Share  
Fall 2014 to Spring 2019

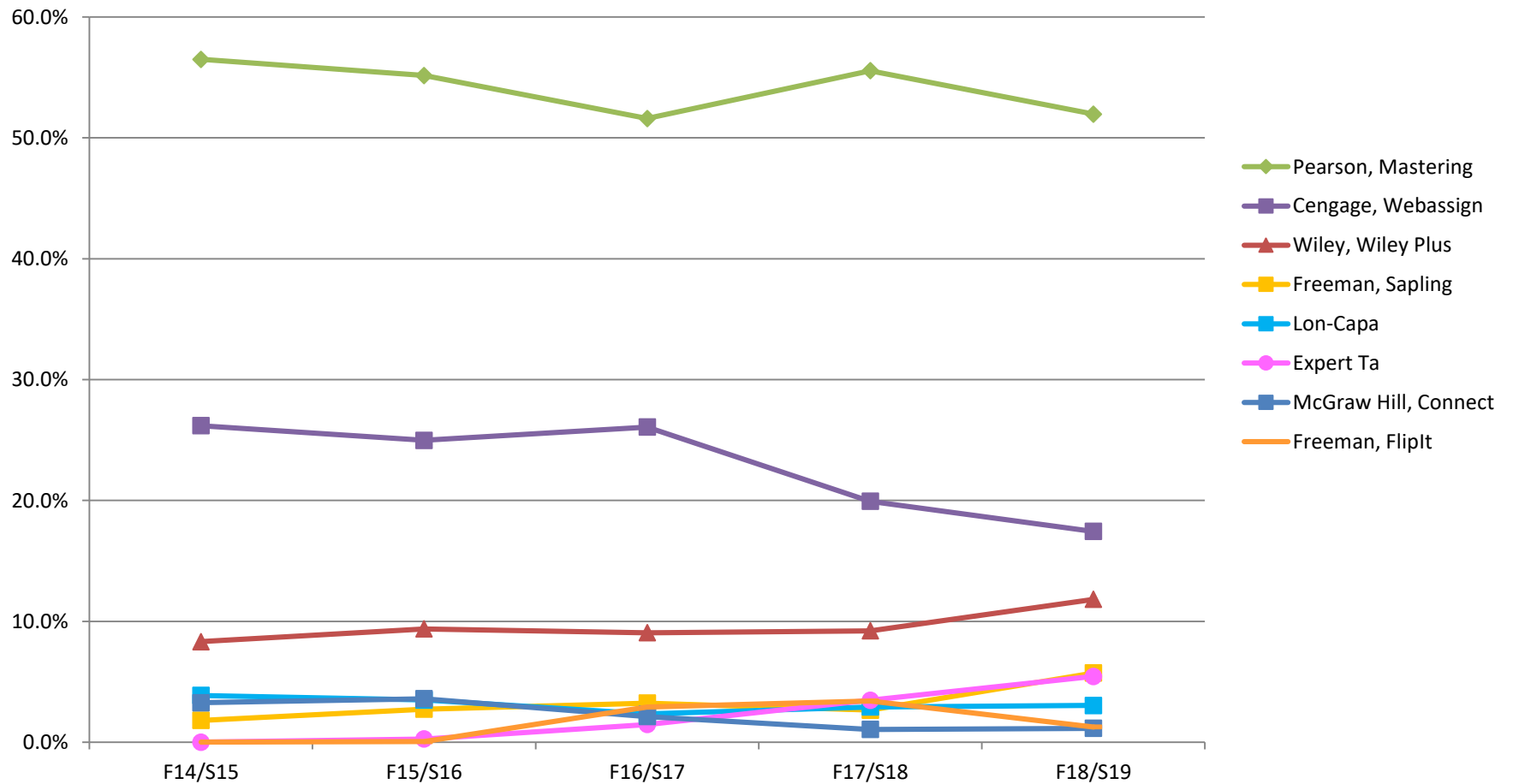
	5-YEAR TOTALS		F14/S15		F15/S16		F16/S17		F17/S18		F18/S19	
Publisher	Enroll	%	Enroll	%	Enroll	%	Enroll	%	Enroll	%		
Pearson, Mastering	444,575	54.1%	85,481	56.5%	84,220	55.2%	86,078	51.6%	96,721	55.6%	92,075	52.0%
Cengage, Webassign	186,861	22.7%	39,624	26.2%	38,139	25.0%	43,490	26.1%	34,704	19.9%	30,904	17.4%
Wiley, Wiley Plus	79,018	9.6%	12,599	8.3%	14,316	9.4%	15,112	9.1%	16,047	9.2%	20,944	11.8%
Freeman, Sapling	27,089	3.3%	2,742	1.8%	4,174	2.7%	5,387	3.2%	4,633	2.7%	10,153	5.7%
Lon-Capa	25,545	3.1%	5,848	3.9%	5,330	3.5%	3,908	2.3%	5,077	2.9%	5,382	3.0%
Expert Ta	18,536	2.3%		0.0%	404	0.3%	2,441	1.5%	6,053	3.5%	9,638	5.4%
McGraw Hill, Connect	17,876	2.2%	4,946	3.3%	5,492	3.6%	3,548	2.1%	1,851	1.1%	2,039	1.2%
Freeman, FlipIt	13,119	1.6%		0.0%	81	0.1%	4,849	2.9%	5,956	3.4%	2,233	1.3%
Other	9,429	1.1%	63	0.0%	517	0.3%	1,996	1.2%	3,046	1.7%	3,807	2.1%
Totals	822,048	100.0%	151,303	100.0%	152,673	100.0%	166,809	100.0%	174,088	100.0%	177,175	100.0%

\*The above numbers are actual enrollments tracked by NAVSTEM, which represent 65% of the total 4-year market.

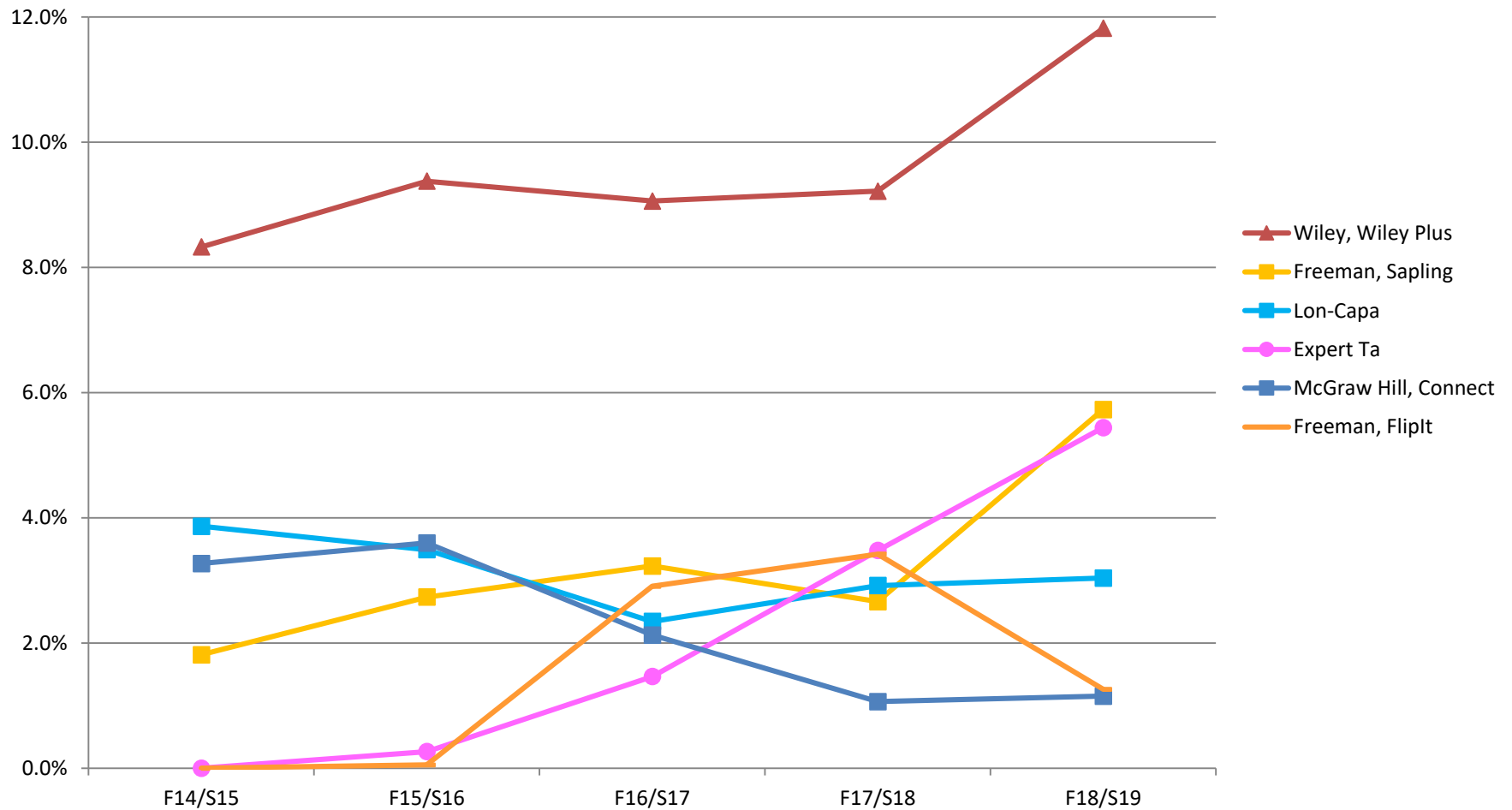
**CHART 3**  
**Algebra-Based Physics**  
**Technology Estimated Enrollment**  
**Fall 2014 to Spring 2019**



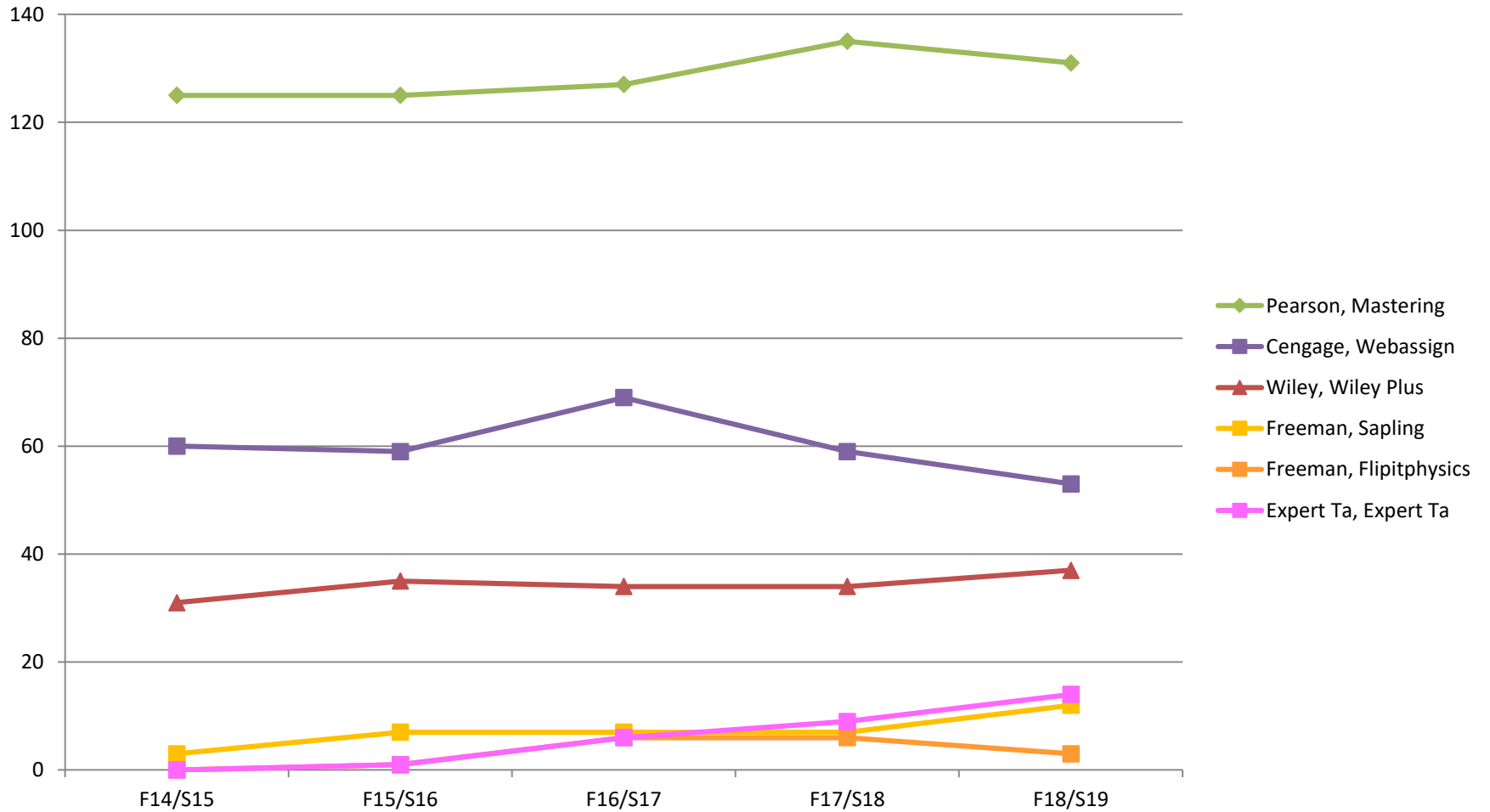
**CHART 4**  
**Algebra-Based Physics**  
**Technology Market Share**  
**Fall 2014 to Spring 2019**



**CHART 4a**  
**Algebra-Based Physics**  
**Technology Market Share excluding Mastering & Webassign**  
**Fall 2014 to Spring 2019**

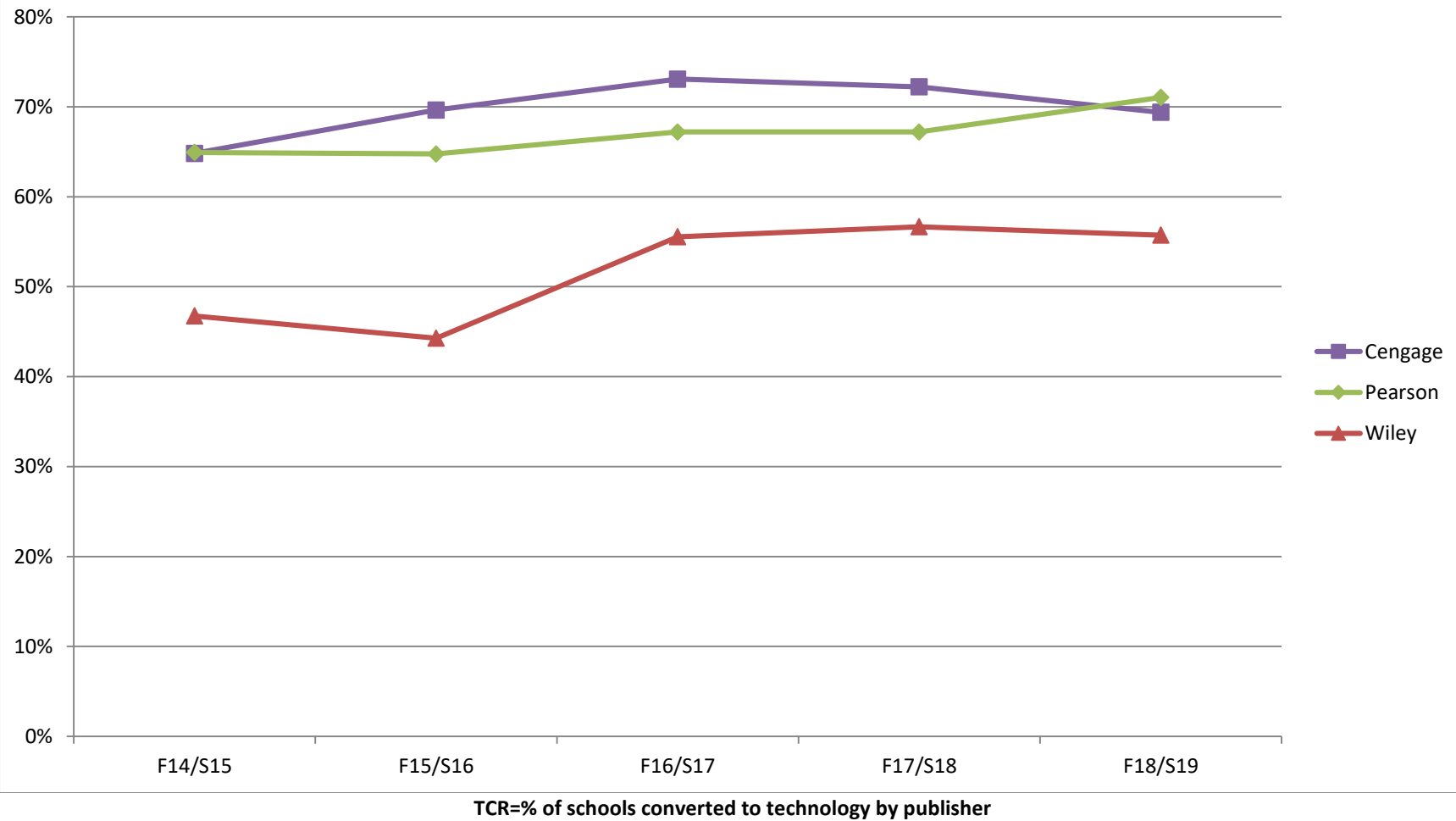


**CHART 5**  
**Algebra-Based Physics**  
**# of Schools using each Technology Product**  
**Fall 2014 to Spring 2019**





**CHART 6**  
**Algebra-Based Physics**  
**Technology Conversion Rate**  
**Fall 2014 to Spring 2019**

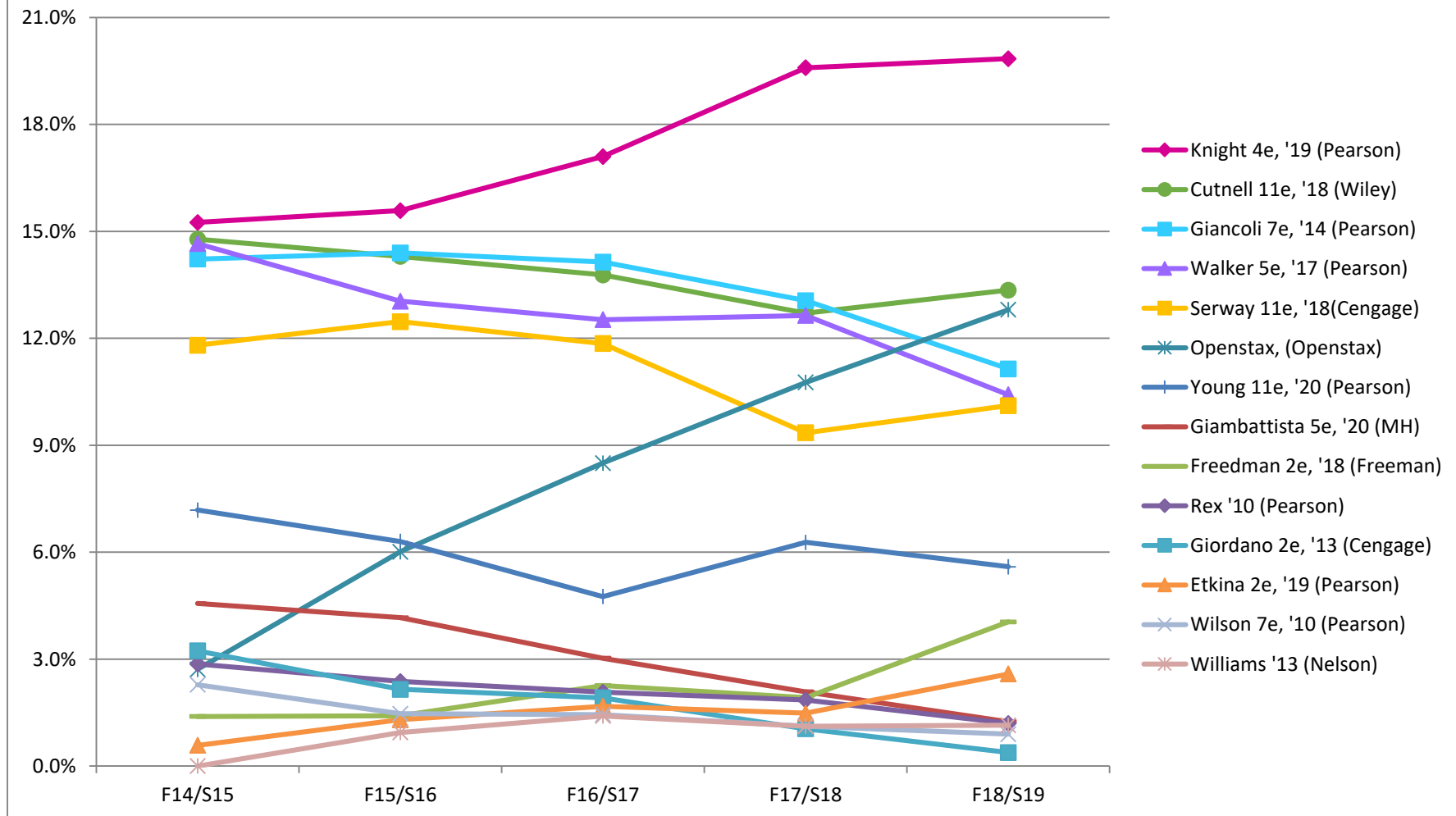


**TABLE 3**  
**Algebra-Based Physics**  
**Annual Title Market Share**  
**Fall 2014 to Spring 2019**

	5-YEAR TOTALS		F14/S15		F15/S16		F16/S17		F17/S18		F18/S19	
Title	Enroll	%	Enroll	%	Enroll	%	Enroll	%	Enroll	%	Enroll	%
Knight 4e, '19 (Pearson)	198,936	17.5%	33,330	15.2%	34,175	15.6%	38,738	17.1%	45,817	19.6%	46,876	19.8%
Cutnell 11e, '18 (Wiley)	156,157	13.8%	32,307	14.8%	31,362	14.3%	31,221	13.8%	29,722	12.7%	31,545	13.4%
Giancoli 7e, '14 (Pearson)	151,557	13.4%	31,087	14.2%	31,575	14.4%	32,033	14.1%	30,540	13.1%	26,322	11.1%
Walker 5e, '17 (Pearson)	143,194	12.6%	32,035	14.7%	28,607	13.0%	28,373	12.5%	29,564	12.6%	24,615	10.4%
Serway 11e, '18(Cengage)	125,761	11.1%	25,801	11.8%	27,343	12.5%	26,858	11.9%	21,871	9.4%	23,888	10.1%
Openstax, (Openstax)	93,794	8.3%	5,930	2.7%	13,190	6.0%	19,260	8.5%	25,172	10.8%	30,242	12.8%
Young 11e, '20 (Pearson)	68,201	6.0%	15,703	7.2%	13,827	6.3%	10,781	4.8%	14,679	6.3%	13,211	5.6%
Giambattista 5e, '20 (MH)	33,788	3.0%	9,968	4.6%	9,136	4.2%	6,862	3.0%	4,880	2.1%	2,942	1.2%
Freedman 2e, '18 (Freeman)	25,319	2.2%	3,045	1.4%	3,097	1.4%	5,124	2.3%	4,491	1.9%	9,562	4.0%
Rex '10 (Pearson)	23,320	2.1%	6,259	2.9%	5,208	2.4%	4,695	2.1%	4,331	1.9%	2,827	1.2%
Giordano 2e, '13 (Cengage)	19,483	1.7%	7,067	3.2%	4,729	2.2%	4,339	1.9%	2,450	1.0%	898	0.4%
Etkina 2e, '19 (Pearson)	17,519	1.5%	1,273	0.6%	2,854	1.3%	3,807	1.7%	3,473	1.5%	6,112	2.6%
Wilson 7e, '10 (Pearson)	16,242	1.4%	4,994	2.3%	3,228	1.5%	3,275	1.4%	2,624	1.1%	2,121	0.9%
Williams '13 (Nelson)	10,587	0.9%	0	0.0%	2,070	0.9%	3,186	1.4%	2,622	1.1%	2,709	1.1%
Other	50,698	4.5%	9,765	4.5%	8,923	4.1%	8,017	3.5%	11,630	5.0%	12,363	5.2%
Totals	1,134,556	100%	218,564	100%	219,324	100%	226,569	100%	233,866	100%	236,233	100%

\*The above numbers are actual enrollments tracked by NAVSTEM, which represent 65% of the total 4-year market.

**Chart 7**  
**Algebra-Based Physics**  
**Annual Market Share for Leading Titles**



# PART B: ALGEBRA-BASED PHYSICS MARKET UNIVERSITY ADOPTION ANALYSIS

## Summary for Period from Fall 2014 through Spring 2019

Total number of schools analyzed for adoption volatility	308
1. Total Number of Schools Using Technology	223 (72%)
a. Total Number of Schools that Changed Technology	58 (19%)
2. Schools that did not change textbooks	166 (54%)
3. Schools that changed textbook for at least one course track	127 (41%)
a. Schools that Changed Adoptions Once	81 (26%)
b. Schools that Changed Adoptions Multiple Times	46 (15%)
• <b>Reverting Back to Original Text</b>	15 (33%)
Total Number Returning to:	
1. Young	5
2. Cutnell	3
3. Knight	2
4. Serway	2
5. Giancoli	1
6. OpenStax	1
7. Giordano	1
• <b>Ending with a Different Adoption</b>	31 (67%)
4. Schools that are Individual Choice for all Tracks	15 (5%)

# 1a. Total Number of Schools that Changed Technology

58 schools (19%)

School Name	Enroll	Tech Details	Tracks	Used One Throughout	Changed Once	Multiple Changes
Arizona State University	1,311	Mastering to Webassign F16; WebAssign to Mastering S17	1			Young (MP) to Serway (WA) F16; Serway (WA) to Young (MP) S17
California State Polytechnic University-Pomona	1,255	Mastering to ExpertTA F18	1		Walker (MP) to OpenStax (ExpTA) F18	
California State University-Fullerton	571	Mastering to WileyPLUS F15	1		Wilson (MP) to Cutnell (WP) F15	
California State University-Los Angeles	1,108	Webassign to Sapling F18	1		Serway(WA) to Freedman (SAP) F18	
California State University-Sacramento	981	sem 1 - Sapling added S19; sem 2- Mastering to Expert TA S18	1			sem 1- Young (MP) to Knight (MP) S15; Knight to Young F17; Young to Young (SAP) S19; sem 2- OpenStax to Knight(MP)S15; Knight to Young (MP) S17; Young (MP) to OpenStax (ExpTA) S18
California State University-San Bernardino	884	WileyPLUS to Mastering F17	1			Young to Cutnell (WP) S16; Cutnell (WP) to Young (MP) F17
Central Michigan University	787	Mastering & TopHat to WebAssign F18	1		Rex (MP & TH) to Serway (WA) F18	
Clarion University	103	WileyPLUS to WebAssign F15	1		Cutnell (WP) to Serway (WA) F15	
Creighton University	433	Sapling to FlipIT S16	1		Knight to Freedman (SAP) F15; Freedman (SAP) to Freedman (FL) S16	

School Name	Enroll	Tech Details	Tracks	Used One Throughout	Changed Once	Multiple Changes
Dalhousie University	444	Mastering to Top Hat F18	1	Knight (MP) to Knight (TH) F18		
Grand Valley State University	1,159	Mastering to Connect F15; Connect to Mastering F17	1			Young (MP) to Giambattista (MHC) F15; Giambattista (MHC) to Young (MP) F17
Idaho State University	217	WebAssign to Top Hat F17	1	Cutnell(WA) to Cutnell (TH) F17		
Kansas State University	1,374	1-Sapling (enr=1050); 2-WebAssign to Mastering S18 (enr=150)	2	2- Giancoli (WA) to Giancoli (MP) S18 (enr=150)		1- Giancoli(MP) to OpenStax (SAP) S16; OpenStax (SAP) to Ruskell-SAP S19
Mercer University	396	Webassign to Mastering S18	1			Walker to Openstax(WA) S15; OpenStax (WA) to Walker (WA) F15; Walker (WA) to Knight (MP) S18
Middle Georgia State College	148	Mastering to WebAssign F16;WebAssign to Mastering F17	2			Giancoli(MP) to OpenStax (WA) F16; OpenStax to Giancoli (MP) F17
Northern Arizona University	1,336	Mastering to WileyPLUS - F18	1		Knight(MP) to Cutnell (WP) F18	
Northern Illinois University	378	Connect to WebAssign F17	1			Giambattista (MHC&WA) to OpenStax F15; OpenStax to Giambattista (MHC) S16; Giambattista (MHC) to Serway (WA) F17
Oklahoma State University	1,256	Mastering to Expert TA S17	1		Giancoli(MP) to OpenStax (ExpTA) S17	
Penn State University	1,507	Webassign to Expert TA F18	1	Knight (WA) to Knight (ExpTA) F18		

School Name	Enroll	Tech Details	Tracks	Used One Throughout	Changed Once	Multiple Changes
Penn State University-Behrend	421	WebAssign to Mastering S18	1		OpenStax (WA) to Giancoli (MP) S18	
Portland State University	815	Mastering to FlipIT F16; FlipIT dropped F18	1			Walker (MP) to Freedman (FL) F16; Freedman (FL) to Walker (FL) S18; Walker (FL) to OpenStax F18
Purdue University	1,900	1 -WebAssign to Mastering S15	1		1- Giordano (WA) to Etkina (MP) S15 (enr=1825)	
Purdue University Northwest	234	Webassign to Mastering F17; Mastering dropped F18	1			Serway(WA) to Etkina S17; Etkina to Knight F17
Queens University	252	Webassign to WileyPLUS F18	1		Serway(WA) to Cutnell (WP) F18	
Ryerson University	436	1 - Mastering to WileyPLUS W18; 2 - Mastering	2	2 - Giancoli (MP)	1 - Giancoli (MP) to Cutnell; Cutnell to Cutnell (WP) W18	
San Jose State University	639	Webassign to Mastering S17	1			sem 1 - Serway to Potter S17; sem 2 - Serway(WA) to Knight (MP) S17
St Cloud State University	357	Webassign to Mastering F18	1		Serway (WA) to Giancoli (MP) F18	
St John's University	252	Webassign to Mastering F17; Mastering to WebAssign F18	1			Serway (WA) to Walker (MP) F17; Walker (MP) to Serway (WA) F18
Syracuse University	463	Mastering to Connect S15	1		Knight(MP) to Giambattista (MHC) S15	
Tennessee State University	241	Connect to Expert TA F18	1		Giambattista (MHC) to Walker (ExpTA) F18	

School Name	Enroll	Tech Details	Tracks	Used One Throughout	Changed Once	Multiple Changes
Texas Tech University	1,048	Webassign to Mastering F17; Mastering dropped S19	1			Giordano (WA) to Walker (MP) F17; Walker (MP) to OpenStax S19
Tulane University	315	1 - WileyPLUS; 2 - WileyPLUS to Mastering S16	1	1 - Cutnell(WP)	2 - Cutnell (WP) to Giancoli (MP) S16	
University of Alaska-Anchorage	523	Mastering to WebAssign S17; WebAssign to Mastering F18	1			Knight (MP) to Openstax (WA) S17; Openstax (WA) to Knight (MP) F18
University of Cincinnati	993	Mastering to WebAssign F18	1		Walker(MP) to Serway (WA) F18	
University of Colorado-Boulder	1,119	1 - Mastering to WileyPLUS S18; WileyPLUS to Sapling F18 2 - Mastering	2	2- Knight (MP)		1 - Giancoli (MP) to Cutnell (WP) S18; Cutnell (WP) to Freedman (SAP) F18
University of Connecticut	675	IC - Mastering; Sapling to Mastering S18	1		Rex (MP or Sapling) to Walker (MP) S18	
University of Florida	2,516	1 -WebAssign & Connect to ExpertTA F17; ExpertTA to Mastering F18; 2 -Mastering	1		2- Bueche (Technical Physics) to Giancoli (MP) F18 (enr = 225)	1. Giambattista (WA, MHC) to OpenStax (ExpTA) F17; OpenStax (ExptTA) to Knight (MP) F18
University of Kansas	997	Mastering to Sapling S16	1		Giancoli (MP) to Openstax (SAP) S16	
University of Louisiana at Lafayette	936	WebAssign to WileyPLUS F15	1	Cutnell (WP)		
University of Massachusetts-Lowell	518	Mastering to FlipIT & Sapling F18	1		Giancoli (MP) to Freedman (FL&SAP) F18	



School Name	Enroll	Tech Details	Tracks	Used One Throughout	Changed Once	Multiple Changes
University of Memphis	329	INDIV Choice - WebAssign, WileyPLUS to WileyPLUS F17	1		IC - Serway (WA), OpenStax (WA), Cutnell (WP) to Cutnell (WP) F17	
University of Missouri-Kansas City	448	Mastering to WileyPLUS S17; WileyPLUS to Expert TA S18	1			Wilson (MP) to Cutnell (WP) S17; Cutnell (WP) to OpenStax (ExpTa) S18
University of Nevada-Las Vegas	1,078	sem 1 - WileyPLUS; sem 2 - WileyPLUS to Mastering F15;	1	sem 1 - Cutnell (WP)		sem 2 - Cutnell (WP) to Knight (MP) F15; Knight (MP) to Cutnell F17; Cutnell to Walker (MP) F18
University of New Orleans	329	WileyPLUS to Sapling F15; Sapling to Mastering F17	1		Cutnell (SAP) to Knight (MP) F17	
University of North Carolina-Charlotte	1,259	sem 1 -WebAssign to Expert TA S16; sem 2 - WebAssign	1	Serway (sem 1 - ExpTA; sem 2 - WA)		
University of Rhode Island	858	WileyPLUS to WebAssign S16; WebAssign to WileyPLUS F17	1		Cutnell(WP) to Cutnell (WA) S16; Cutnell (WA) to Tammara (WP) F17	
University of South Florida	2,586	Mastering to Sapling F18	1		Knight (MP) to Freedman (SAP) F18	
University of Tennessee-Chattanooga	327	WileyPLUS to WebAssign S18; WebAssign to WileyPLUS S19	1			Cutnell(WP) to OpenStax (WA) S18; OpenStax (WA) to Cutnell (WP) S19
University of Texas-Austin	1,016	Webassign to Quest F17	1		Serway(WA) to Serway (Quest) F17; Serway (Quest) to OpenStax (Quest S18)	

School Name	Enroll	Tech Details	Tracks	Used One Throughout	Changed Once	Multiple Changes
University of Texas-El Paso	969	Connect to Mastering F16	1		Giambattista(MHC) to Knight (MP) F16	
University of Tulsa	132	Mastering to Expert TA S17	1	Walker (MP) to Walker (ExpTA) S17		
University of Vermont	355	WileyPLUS to Mastering F15	1		Cutnell (WP) to Knight (MP) F15	
University of Waterloo	1,830	Mastering to WebAssign F15	1			Walker (MP) to Serway (WA) F15; Serway (WA) to OpenStax W18; OpenStax to Serway (WA) F18
University of Wisconsin-Madison	2,088	WebAssign to FlipIT S17 and Mastering (added S18)	1		Serway (WA) to OpenStax (FL & MP) S17	
Utah State University	551	Webassign to WileyPLUS F18	1	Cutnell (WA) to Cutnell (WP) F18		
Virginia Polytechnic Institute	1,573	WebAssign to WileyPLUS F18	1		Giordano(WA) to Cutnell (WP) F18	
Western Washington University	715	Webassign to Mastering F17	1		Giordano(WA) to Knight (MP) F17	
Wichita State University	293	WebAssign to WileyPLUS F15	1		Freedman (WA) to Cutnell (WP) F15	

**TABLE B1**  
**Algebra-Based Physics Market**  
**Volatility Grid: Summary of Technology Adoptions Changes**  
**Fall 2014 to Spring 2019**

<b>To:</b>									
<b>From:</b>	<b>Total</b>	<b>Connect</b>	<b>Expert TA</b>	<b>Mastering</b>	<b>Sapling</b>	<b>FlipIT</b>	<b>Top Hat</b>	<b>Webassign</b>	<b>WileyPlus</b>
<b>Connect</b>	5		2	2				1	
<b>Expert TA</b>	1			1					
<b>Mastering</b>	26	2	4		4	2	2	7	5
<b>Sapling</b>	2			1		1			
<b>FlipIT</b>	0								
<b>Top Hat</b>	3				3				
<b>Webassign</b>	26		3	13	1	1	1		7
<b>WileyPlus</b>	10		1	5	1			3	
<b>Total</b>	34	2	10	22	9	4	3	11	12

## 2. Schools that did not change textbooks 166 schools (54%)

School Name	Enroll	Tech Details	Tracks	Used One Throughout
Alabama A&M University	31	WileyPlus dropped F17	1	Cutnell
Appalachian State University	1,177		1	Giancoli
Baylor University	980	Mastering	1	Giancoli(MP)
Binghamton University	687	Mastering	1	Giancoli(MP)
Boise State University	504	Mastering	1	Knight(MP)
Boston College	252		1	Knight
Boston University	1,111		1	Duffy
Bradley University	462	Mastering	1	Young (MP)
Brooklyn College of CUNY	880		1	Walker & Openstax
California Polytechnic State Univ-San Luis Obispo	2,028	Mastering	1	Knight(MP)
California State University-Dominguez Hills	504	WileyPLUS	1	Cutnell(WP)
California State University-Fresno	691	WebAssign	1	Serway (WA)
Carleton University	872	Connect dropped F15	1	Giambattista-Phys
Case Western Reserve University	341		1	Cutnell
Catholic University of America	29		1	Giancoli
City University of New York-City College	950	1 - WileyPLUS	2	1-Cutnell(WP); 2; Giancoli
Clemson University	1,453	Mastering	1	Walker (MP)
Cleveland State University	530	WileyPLUS	1	Cutnell(WP)
Cornell University	382	Connect	1	Giambattista(MHC)
Dalhousie University	444	Mastering to Top Hat F18	1	Knight (MP) to Knight (TH) F18
DePaul University	504		1	Knight
Eastern Kentucky University	333	WebAssign	1	Serway (WA)
Embry Riddle University (Florida)	264	WebAssign	1	Serway -E (WA)
Embry-Riddle Aeronautical University-Prescott	264		1	Cutnell
Fairleigh Dickinson University	46		1	Giancoli
Ferris State University	658	Mastering-dropped S15	1	Wilson
Florida Atlantic University	652	WileyPLUS	1	Cutnell(WP)
Florida Gulf Coast University	468	Webassign	1	Serway(WA)
Florida International University	1,117	Mastering	1	Young(MP)
Gannon University	169	Mastering	1	Giancoli(MP)
George Mason University	653	Mastering	1	Giancoli(MP)
George Washington University	872	Mastering	1	Knight (MP)

School Name	Enroll	Tech Details	Tracks	Used One Throughout
Georgia State University	1,939	Mastering	1	Knight(MP)
Howard University	547	WileyPLUS	2	1-Cutnell(WP); 2- Salu
Humboldt State University	250		1	OpenStax
Hunter College of CUNY	1,199		1	Giancoli
Idaho State University	217	WebAssign to Top Hat F17	1	Cutnell(WA) to Cutnell (TH) F17
Illinois Institute of Technology	66		1	Salu
Illinois State University	465		1	Cutnell
Indiana University of Pennsylvania	252	Mastering	1	Young (MP)
Indiana University, Purdue University-Indianapolis	368	WebAssign dropped F17	0	Giancoli
John Brown University	132		1	Giancoli
Kent State University	739	Mastering	1	Walker(MP)
Louisiana Tech University	677	WileyPLUS	1	Cutnell(WP)
Loyola Marymount University	132		1	Knight
McGill University	1,398	Lon Capa; Mastering dropped F18	1	Giancoli ( LC)
McMaster University	1,260	WileyPLUS added F18	2	1- Cutnell (WP); 2- Zinke-Allmang (w/Bio)
Miami University	574	Mastering	1	Knight (MP)
Michigan State University	2,462	Lon Capa	1	Rex (LC)
Middle Tennessee State University	765	Mastering	1	Knight (MP)
Minnesota State University-Mankato	408	WileyPLUS	1	Cutnell(WP)
Mississippi State University	969	Mastering	1	Giancoli(MP)
Missouri University of Science & Technology	91		1	Knight
Montana State University	1,067		1	Hellings
Montclair State University	494	Webassign	1	Serway (WA)
New Jersey Institute of Technology	497	Mastering	1	Giancoli (MP)
New York City College of Technology	1,477	Mastering dropped F16	1	Young
New York Institute of Technology	301		2	1 - Serway; 2- Giancoli
North Carolina A&T State University	596	Webassign; WileyPLUS dropped F18	1	1 Cutnell (WA)
Northeastern University	797	Mastering	1	Giancoli (MP)
Northern Kentucky University	1,260		1	Cutnell
Norwich University	128	Mastering	1	Giancoli (MP)
Nova Southeastern University	585	Mastering	1	Giancoli(MP)
Oakland University	746	Webasssign	1	Serway(WA)

School Name	Enroll	Tech Details	Tracks	Used One Throughout
Ohio State University	2,623	Mastering	1	Giancoli (MP)
Old Dominion University	802	Mastering	1	Young(MP)
Oregon State University	1,591	Mastering	1	Knight(MP)
Penn State University	1,507	Webassign to Expert TA F18	1	Knight (WA) to Knight (ExpTA) F18
Prairie View A&M University	193		1	term1: Rex, term2 Serway
Queens College of CUNY	863	Mastering	1	Young (MP)
Sam Houston State University	734	Mastering	1	Walker (MP)
San Francisco State University	1,149	Mastering	1	Walker (MP)
Seattle University	194	Mastering F16	1	Giancoli (MP)
South Dakota School of Mines & Technology	79	WileyPLUS	1	Cutnell WP)
Southern Illinois University-Carbondale	289	WileyPlus dropped F17	1	Cutnell (w/OpenStax some terms)
Southern University	103	Mastering dropped S16	1	Giancoli
Stanford University	287	Mastering	1	Giancoli (MP)
Stevens Institute of Technology	129	WebAssign	1	Giordano (WA)
SUNY Albany	330	WileyPLUS	1	Cutnell(WP)
SUNY Stony Brook	743	Mastering	1	Knight(MP)
Texas A&M University	1,265	Webassign & Mastering	1	Young (WA&MP)
Texas A&M University-Corpus Christi	506	WebAssign	1	Serway (WA)
Texas A&M University-Kingsville	242		1	OpenStax
The Citadel	316	Mastering	1	Giancoli (MP)
Towson University	623		1	Wilson
University of Akron	903	Mastering	1	Wilson (MP)
University of Alabama	787	Mastering	1	Giancoli (MP)
University of Alabama-Birmingham	926	Webassign	1	Cutnell (WA)
University of Alabama-Huntsville	269	WileyPLUS	1	Cutnell (WP)
University of Alaska-Fairbanks	132	Mastering	1	Giancoli (MP)
University of Alberta	945	Mastering	1	Walker (MP)
University of Arizona	1,524	WileyPLUS	1	Cutnell (WP) & OpenStax
University of California-Davis	559	Mastering	1	Giancoli (MP)
University of California-Los Angeles	5,656	Mastering	1	Knight -custom (MP)
University of California-Riverside	2,717	Mastering	1	Knight - custom (MP)
University of California-Santa Barbara	2,556	Sapling	1	Freedman (Sap)
University of Central Missouri	196	Expert TA	1	Giambattista (ExpTA)

School Name	Enroll	Tech Details	Tracks	Used One Throughout
University of Colorado-Colorado Springs	132		1	Giancoli
University of Dayton	499	Mastering	1	Giancoli (MP)
University of Delaware	1,013	Mastering	1	Walker (MP)
University of Denver	395	WileyPLUS	1	Cutnell (WP)
University of Georgia	2,003	IC Mastering; Lon Capa	1	Walker (MP & LC)
University of Guelph	3,484	2-WebAssign	2	1 - Williams (Bio); 2 - McFarland (WA)
University of Hartford	217		1	OpenStax
University of Houston	2,960	Mastering	1	Walker (MP)
University of Idaho	445	WileyPLUS	1	Cutnell (WP)
University of Illinois-Chicago	868	Mastering	1	Knight (MP)
University of Iowa	838	WileyPLUS	1	Cutnell (WP)
University of Kentucky	1,210	Webassign	1	Serway (WA)
University of Louisiana at Lafayette	936	WebAssign to WileyPLUS F15	1	Cutnell (WP)
University of Maine	516	Mastering	1	Knight (MP)
University of Manitoba	690	WileyPLUS	1	Cutnell (WP)
University of Maryland	878	Mastering & Expert TA	1	Knight (MP & ExpTA)
University of Maryland-Baltimore County	1,666	Mastering	1	Knight (MP)
University of Massachusetts-Amherst	1,802	Mastering	1	OpenStax to OpenStax (MP) F16
University of Massachusetts-Boston	384		1	Giancoli
University of Miami	731	Mastering	2	1- Walker(MP); 2- Salu
University of Michigan-Ann Arbor	218		1	Salu
University of Michigan-Dearborn	465	WileyPlus dropped F17	1	Cutnell
University of Minnesota	861		1	1 - Knight; 2 - OpenStax
University of Minnesota-Duluth	308	Mastering dropped S17	1	Walker
University of Mississippi	723	Mastering (MP&TopHat)	1	Giancoli(MP & TH)
University of Missouri-St. Louis	370		1	Walker
University of Nebraska-Omaha	786	1 - Mastering	2	1- Young (MP) (enr=300); 2- Wall (enr-200)
University of Nevada-Reno	1,050	Webassign	1	Serway (WA)
University of New Haven	132		1	Serway
University of New Mexico	683	Mastering	1	Knight (MP)
University of North Carolina-Chapel Hill	1,262	Mastering	1	Knight (MP)

School Name	Enroll	Tech Details	Tracks	Used One Throughout
University of North Carolina-Charlotte	1,259	sem 1 -WebAssign to Expert TA S16; sem 2 - WebAssign	1	Serway (sem 1 - ExpTA; sem 2 - WA)
University of North Dakota	512	WebAssign	2	1 - Serway (WA); 2 - Openstax
University of North Texas	908	WileyPLUS	1	Cutnell (WP)
University of Northern Iowa	361	Mastering	1	Knight (MP)
University of Oklahoma	1,009	sem1 - Expert TA; sem 2 - IC Expert TA & Mastering	1	Giancoli (sem 1 - ExpTA; sem 2 - IC ExpTA & MP)
University of Pennsylvania	1,308	Mastering	1	Giancoli (MP)
University of Portland	192	Mastering	1	Knight (MP)
University of Scranton	361	WebAssign	1	Serway (WA)
University of South Alabama	358	Mastering	1	Walker (MP)
University of South Carolina	1,414		1	Jones & OpenStax
University of Southern California	568	Mastering	2	1- Giancoli (MP) (enr=310); 2- Young (enr=90)
University of Southern Maine	66		1	Giancoli
University of St Thomas	188	Mastering	1	Knight (MP)
University of Texas Rio Grande Valley-Edinburg	658	Mastering	1	Walker (MP)
University of Texas-Dallas	995	Mastering	1	Young (MP)
University of Texas-San Antonio	2,408	Webassign	1	Serway (WA)
University of the Pacific	472	WileyPlus dropped F17	1	Cutnell
University of Tulsa	132	Mastering to Expert TA S17	1	Walker (MP) to Walker (ExpTA) S17
University of Victoria	901	WebAssign	1	Serway (WA)
University of Virginia	695	Mastering	1	Walker (MP)
University of West Florida	430	Mastering	1	Knight (MP)
University of Windsor	252	WileyPLUS	1	Cutnell (WP)
University of Wisconsin-Platteville	197		2	1- Cutnell; 2- Serway-E
Utah State University	551	Webassign to WileyPLUS F18	1	Cutnell (WA) to Cutnell (WP) F18
Utah Valley University	592	Mastering	1	Knight (MP)
Valparaiso University	70	Mastering	1	Walker (MP)
Virginia Commonwealth University	1,705		1	Walker
Virginia State University	293	Webassign	1	Serway (WA)
Walla Walla University	137		1	Giancoli
West Virginia University	1,407	Webassign	1	Serway (WA)



School Name	Enroll	Tech Details	Tracks	Used One Throughout
Western Illinois University	56		1	Wilson
Western Michigan University	344	WebAssign	1	Serway (WA)
Western New England College	132	Mastering	1	Knight (MP)
Widener University	198		1	Knight
Williams College	132		1	Giancoli
Wright State University	646	Mastering	1	Giancoli (MP)
York College of Pennsylvania	102	Mastering	1	Giancoli (MP)
Youngstown State University	304	Mastering	2	1 - Giancoli (MP) 2- Knight (enr=75)

### 3. Schools that changed textbook in at least one course track

#### *a. Changed adoptions once– 81 schools (26%)*

**PLEASE NOTE:** The following convention was used in the table below: the number that appears before an author's name indicates the track for which the text is used. In many cases there are entries in both the Used One Throughout and Changed Once columns. In these cases some course tracks had no adoption changes while others had one change during the period. 'INDIVIDUAL CHOICE' after a course track number indicates individual instructor choice rather than a department-wide adoption.

School Name	Enroll	Tech Details	Tracks	Used One Throughout	Changed Once
Alfred State College	449		2	2 - Giancoli	1 - Wilson to Young S18
Arkansas Tech University	160	Webassign	1		Walker (WA) to Serway (WA) F18
Auburn University	1,274	WebAssign Dropped F17	1		Serway (WA) to Openstax S17
Bowling Green State University	126	Mastering	1		Giordano to Knight (MP) - F18
California State Polytechnic University-Pomona	1,255	Mastering to ExpertTA F18	1		Walker (MP) to OpenStax (ExpTA) F18
California State University-Chico	858	Mastering dropped S17	1		Young(MP) to Etkina F16
California State University-Fullerton	571	Mastering to WileyPLUS F15	1		Wilson (MP) to Cutnell (WP) F15
California State University-Los Angeles	1,108	Webassign to Sapling F18	1		Serway(WA) to Freedman (SAP) F18
California State University-Northridge	940	Mastering	1		Young to Walker (MP) S15
Central Michigan University	787	Mastering & TopHat to WebAssign F18	1		Rex (MP & TH) to Serway (WA) F18
Clarion University	103	WileyPLUS to WebAssign F15	1		Cutnell (WP) to Serway (WA) F15
Clarkson University	99		1		Cutnell to Franklin-Bio F15
Colorado State University	1,345	Mastering;WebAssign dropped S16	1		IC - Knight(MP); Giambattista(WA); Young (MP) to Knight (MP) S16
Columbus State University	152	Mastering	1		Knight(MP) & Openstax(Sap & TH) to Knight (MP) S17
Creighton University	433	Sapling to FlipIT S16	1		Knight to Freedman (SAP) F15; Freedman (SAP) to Freedman (FL) S16

School Name	Enroll	Tech Details	Tracks	Used One Throughout	Changed Once
Drexel University	1,195	1&3 - Webassign-dropped F14	3	1 & 3- Serway	2-Giancoli to Cutnell S15
Gonzaga University	132		1		Coletta to Cutnell S15
Grambling State University	340	Mastering dropped S16	1		Wilson(MP) to Young F15
Jackson State University	186	Mastering	1		Wilson (MP) to Young (MP) F17
Kennesaw State University	1,067	Webassign	1		IC Giancoli(MP); Openstax; Cutnell (WA) to Cutnell (WA) F15
Lafayette College	56	Mastering	1		Walker (MP) to Knight (MP) F16
Lamar University	475	Mastering	2		1- Wilson (MP) to Knight (MP) F17; 2 - Wilson (MP) to Knight (MP) F17
Lawrence Technological University	196	1-WileyPLUS; 2- WebAssign	2	1- Cutnell (WP)	2- Kinetic to OpenStax (WA) F17
Manhattan College	73	Mastering Dropped F15	1		IC - Cutnell, Serway, Giancoli to Rex F15
Marquette University	132	Connect & Aleks	1		Giambattista(MHC&Aleks) to Etkina (MC) F18
Memorial University of Newfoundland	504	Mastering	1		Knight (MP) to Walker (MP) F17
Michigan Technological University	229	1-Connect ; 2- WebAssign	1	1 - Giambattista (MHC)	2- Giordano(WA) to OpenStax (WA) F15
Montana College of Mineral Science & Technology	84		1		Hellings to OpenStax F16
Northern Arizona University	1,336	Mastering to WileyPLUS - F18	1		Knight(MP) to Cutnell (WP) F18
Northwestern University	631	Mastering	1		Giancoli to Knight (MP) F18
Ohio Northern University	53	Mastering-dropped S15	1		Wilson to Giancoli F15
Ohio University	904		1		Cutnell to Openstax F15
Oklahoma State University	1,256	Mastering to Expert TA S17	1		Giancoli(MP) to OpenStax (ExpTA) S17
Penn State University-Behrend	421	WebAssign to Mastering S18	1		OpenStax (WA) to Giancoli (MP) S18
Princeton University	200	WileyPlus dropped F16	1		Cutnell(WP) to Etkina F16

School Name	Enroll	Tech Details	Tracks	Used One Throughout	Changed Once
Purdue University	1,900	1 -WebAssign to Mastering S15	1		1- Giordano (WA) to Etkina (MP) S15 (enr=1825)
Purdue University-Fort Wayne	356		1		Knight to OpenStax S17
Queens University	252	Webassign to WileyPLUS F18	1		Serway(WA) to Cutnell (WP) F18
Rochester Institute of Technology	900	Mastering	1		Knight(MP) to Walker (MP) S15
Ryerson University	436	1 - Mastering to WileyPLUS W18; 2 - Mastering	2	2 - Giancoli (MP)	1 - Giancoli (MP) to Cutnell; Cutnell to Cutnell (WP) W18
Saginaw Valley State University	330	WileyPLUS dropped F18	1		Young to Cutnell F15
South Dakota State University	439		1		Walker to Serway - F18
Southeastern Oklahoma State University	64	Mastering dropped F15	1		Young (MP) to Knight F15
St Cloud State University	357	Webassign to Mastering F18	1		Serway (WA) to Giancoli (MP) F18
St Louis University	816	Mastering dropped F15	2	2- Nikolo	1 - Young (MP) to Knight F15
Syracuse University	463	Mastering to Connect S15	1		Knight(MP) to Giambattista (MHC) S15
Tennessee State University	241	Connect to Expert TA F18	1		Giambattista (MHC) to Walker (ExpTA) F18
Texas Christian University	229	WileyPLUS	1		Serway to Cutnell (WP) F16
Troy University	630	WebAssign	1		Serway(WA) to OpenStax (WA) F15
Tufts University	385	Sapling	1		Walker to Freedman (SAP) F18
Tulane University	315	1 - WileyPLUS; 2 - WileyPLUS to Mastering S16	1	1 - Cutnell(WP)	2 - Cutnell (WP) to Giancoli (MP) S16
Tuskegee University	162		1		Giancoli to OpenStax F15
University of Cincinnati	993	Mastering to WebAssign F18	1		Walker(MP) to Serway (WA) F18
University of Connecticut	675	IC - Mastering; Sapling to Mastering S18	1		Rex (MP or Sapling) to Walker (MP) S18
University of Hawaii-Manoa	720	Mastering dropped F16	1		Young(MP) to OpenStax F16

School Name	Enroll	Tech Details	Tracks	Used One Throughout	Changed Once
University of Houston-Clear Lake	220	Mastering dropped S19	1		Giancoli (MP) to Openstax S19
University of Illinois at Urbana-Champaign	1,282	FlipIT (Sapling dropped S18)	1		Giambattista to Freedman (FL) F16
University of Kansas	997	Mastering to Sapling S16	1		Giancoli (MP) to Openstax (SAP) S16
University of Massachusetts-Lowell	518	Mastering to FlipIT & Sapling F18	1		Giancoli (MP) to Freedman (FL&SAP) F18
University of Memphis	329	INDIV Choice - WebAssign, WileyPLUS to WileyPLUS F17	1		IC - Serway (WA), OpenStax (WA), Cutnell (WP) to Cutnell (WP) F17
University of New Orleans	329	WileyPLUS to Sapling F15; Sapling to Mastering F17	1		Cutnell (SAP) to Knight (MP) F17
University of Notre Dame	78	Mastering	1		Wilson (MP) to Young (MP) F18
University of Oregon	1,079	Mastering	1		Giancoli (MP) to Knight (MP) F15
University of Pittsburgh	1,806	Sapling	1		Cutnell to Openstax (SAP) F18
University of Rhode Island	858	WileyPLUS to WebAssign S16; WebAssign to WileyPLUS F17	1		Cutnell(WP) to Cutnell (WA) S16; Cutnell (WA) to Tammara (WP) F17
University of South Florida	2,586	Mastering to Sapling F18	1		Knight (MP) to Freedman (SAP) F18
University of Southern Mississippi	376		1		Serway E to Openstax F16
University of Texas-Austin	1,016	Webassign to Quest F17	1		Serway(WA) to Serway (Quest) F17; Serway (Quest) to OpenStax (Quest S18)
University of Texas-El Paso	969	Connect to Mastering F16	1		Giambattista(MHC) to Knight (MP) F16
University of Toronto	1,343	Mastering	1		Wolfson Essen (calc-based) to Etkina (MP) F18
University of Vermont	355	WileyPLUS to Mastering F15	1		Cutnell (WP) to Knight (MP) F15

School Name	Enroll	Tech Details	Tracks	Used One Throughout	Changed Once
University of Western Ontario	654	WebAssign	1		Zinke-Allmang-Bio (WA) to McFarland (WA) F16
University of Wisconsin-Madison	2,088	WebAssign to FlipIT S17 and Mastering (added S18)	1		Serway (WA) to OpenStax (FL & MP) S17
University of Wyoming	566	Webassign dropped S17	1		Serway(WA) to OpenStax (WA) F16
Virginia Military Institute	132	Mastering dropped F16	1		Cutnell to Giancoli F15
Virginia Polytechnic Institute	1,573	WebAssign to WileyPLUS F18	1		Giordano(WA) to Cutnell (WP) F18
Washington State University	912	Mastering dropped F15; WebAssign added S19	1		Knight (MP) to OpenStax (WA) F15
Weber State University	198	Mastering dropped S16	1		IC - Knight, Openstax to OpenStax S17
Western Washington University	715	Webassign to Mastering F17	1		Giordano(WA) to Knight (MP) F17
Wichita State University	293	WebAssign to WileyPLUS F15	1		Freedman (WA) to Cutnell (WP) F15
York University	218	WebAssign	1		Serway (WA) to McFarland (WA) F18

### 3. Schools that changed textbook in at least one course track

*b. Changed adoptions multiple times – 46 schools (15%)*

**PLEASE NOTE:** The following convention was used in the table below: the number that appears before an author's name indicates the track for which the text is used. In many cases there are entries in both the Used One Throughout and Changed Once columns. In these cases some course had no adoption changes while others had one change during the period. 'INDIVIDUAL CHOICE' after a course track number indicates individual instructor choice rather than a department-wide adoption.

School Name	Enroll	Tech Details	Tracks	Used One Throughout	Changed Once	Multiple Changes
Arizona State University	1,311	Mastering to Webassign F16; WebAssign to Mastering S17	1			Young (MP) to Serway (WA) F16; Serway (WA) to Young (MP) S17
Ball State University	468	Mastering dropped F15; WebAssign added F18	1			Serway to Young(MP) F14; Young (MP) to Giambattista F15; Giambattista to Serway (WA) F18
California State University-Long Beach	1,056	WileyPLUS	1			Cutnell (WP) to OpenStax (F16); OpenStax to Cutnell (WP) S17
California State University-Sacramento	981	sem 1 - Sapling added S19; sem 2- Mastering to Expert TA S18	1			sem 1- Young (MP)to Knight (MP) S15; Knight to Young F17; Young to Young (SAP) S19; sem 2- OpenStax to Knight(MP)S15; Knight to Young (MP) S17; Young (MP) to OpenStax (ExpTA) S18
California State University-San Bernardino	884	WileyPLUS to Mastering F17	1			Young to Cutnell (WP) S16; Cutnell (WP) to Young (MP) F17
Eastern Michigan University	967	Mastering dropped F17	1			sem 1- Freedman to Walker (MP) W15; sem 2- Cutnell to Walker W15

School Name	Enroll	Tech Details	Tracks	Used One Throughout	Changed Once	Multiple Changes
Florida State University	1,284	Mastering	1			IC Walker (MP); Giordano to Walker (MP) F16; Walker (MP) to OpenStax F17
Georgia Southern University	832	Mastering	1			Young(MP) to Knight (MP) F16; Knight (MP) to Knight (MP) & OpenStax F18
Grand Valley State University	1,159	Mastering to Connect F15; Connect to Mastering F17	1			Young (MP) to Giambattista (MHC) F15; Giambattista (MHC) to Young (MP) F17
Iowa State University	1,666	1. Mastering & Top Hat; 2. Mastering & Top Hat	2	1 - Giancoli(MP & TH) (enr=1,600)		1 - Walker to Giancoli (MP&TH) F15; Giancoli to Walker (MP&TH) S19 (enr=200)
James Madison University	498	WebAssign	1			Giambattista to OpenStax F16; OpenStax to Giambattista F17; Giambattista to Serway (WA) F18
Kansas State University	1,374	1-Sapling (enr=1050); 2-WebAssign to Mastering S18 (enr=150)	2	2- Giancoli (WA) to Giancoli (MP) S18 (enr=150)		1- Giancoli(MP) to OpenStax (SAP) S16; OpenStax (SAP) to Ruskell-SAP S19
Loyola University	519	Mastering	1			Young (MP) to Knight (MP) F16; Knight (MP) to Young (MP) S17; Second term only - Young (MP) to Hewitt Conceptual Physics S19
Mercer University	396	Webassign to Mastering S18	1			Walker to Openstax(WA) S15; OpenStax (WA) to Walker (WA) F15; Walker (WA) to Knight (MP) S18



School Name	Enroll	Tech Details	Tracks	Used One Throughout	Changed Once	Multiple Changes
Middle Georgia State College	148	Mastering to WebAssign F16; WebAssign to Mastering F17	2			Giancoli(MP) to OpenStax (WA) F16; OpenStax to Giancoli (MP) F17
North Dakota State University	641	FlipIT dropped F18	1			Giordano to Ruskell (FL) S18; Ruskell (FL) to Giordano F18
Northern Illinois University	378	Connect to WebAssign F17	1			Giambattista (MHC&WA) to OpenStax F15; OpenStax to Giambattista (MHC) S16; Giambattista (MHC) to Serway (WA) F17
Portland State University	815	Mastering to FlipIT F16; FlipIT dropped F18	1			Walker (MP) to Freedman (FL) F16; Freedman (FL) to Walker (FL) S18; Walker (FL) to OpenStax F18
Purdue University Northwest	234	Webassign to Mastering F17; Mastering dropped F18	1			Serway(WA) to Etkina S17; Etkina to Knight F17
Roger Williams University	218	WebAssign	1			Updike to Serway (WA) S16; Serway to OpenStax (WA) S17; Opentax (WA) to Serway (WA) F17
Rowan University	469	Mastering dropped F17	1			Walker (MP) to Knight (MP) F15; Knight (MP) to OpenStax F17
San Jose State University	639	Webassign to Mastering S17	1			sem 1 - Serway to Potter S17; sem 2 - Serway(WA) to Knight (MP) S17

School Name	Enroll	Tech Details	Tracks	Used One Throughout	Changed Once	Multiple Changes
St John's University	252	Webassign to Mastering F17; Mastering to WebAssign F18	1			Serway (WA) to Walker (MP) F17; Walker (MP) to Serway (WA) F18
Temple University	1,451	Mastering	2			1 - Giancoli (MP) to Knight (MP) S18; 2 - Giancoli (MP) to Etkina (MP) F17
Texas Tech University	1,048	Webassign to Mastering F17; Mastering dropped S19	1			Giordano (WA) to Walker (MP) F17; Walker (MP) to OpenStax S19
University of Alaska-Anchorage	523	Mastering to WebAssign S17; WebAssign to Mastering F18	1			Knight (MP) to Openstax (WA) S17; Openstax (WA) to Knight (MP) F18
University of Arkansas	1,404	2 - Mastering	2			1 - Walker(MP) to Knight F15; 2- Colletta to Giancoli (MP) F17
University of British Columbia	795	Mastering dropped F15	1			Knight(MP) to OpenStax F15; OpenStax to Reinsenber (notes) F16
University of Colorado-Boulder	1,119	1 - Mastering to WileyPLUS S18; WileyPLUS to Sapling F18 2 - Mastering	2	2- Knight (MP)		1 - Giancoli (MP) to Cutnell (WP) S18; Cutnell (WP) to Freedman (SAP) F18
University of Florida	2,516	1 -WebAssign & Connect to ExpertTA F17; ExpertTA to Mastering F18; 2 - Mastering	1		2- Bueche (Technical Physics) to Giancoli (MP) F18 (enr = 225)	1. Giambattista (WA, MHC) to OpenStax (ExpTA) F17; OpenStax (ExpTA) to Knight (MP) F18

School Name	Enroll	Tech Details	Tracks	Used One Throughout	Changed Once	Multiple Changes
University of Louisville	485	Mastering dropped S18	1			Serway to Young (MP) S16; Young (MP) to Serway S18
University of Missouri-Kansas City	448	Mastering to WileyPLUS S17; WileyPLUS to Expert TA S18	1			Wilson (MP) to Cutnell (WP) S17; Cutnell (WP) to OpenStax (ExpTa) S18
University of Nebraska-Lincoln	963	1-Webassign; 2-Mastering dropped S17	2	1- Cutnell(WA) (enr=675)		2-Walker(MP) to Giancoli(MP) (enr=200) S15; Giancoli (MP) to OpenStax S17; Openstax to Walker S18
University of Nevada-Las Vegas	1,078	sem 1 - WileyPLUS; sem 2 - WileyPLUS to Mastering F15;	1	sem 1 - Cutnell (WP)		sem 2 - Cutnell (WP) to Knight (MP) F15; Knight (MP) to Cutnell F17; Cutnell to Walker (MP) F18
University of New Hampshire	476	Mastering	1	sem 1 - Knight(MP)		sem2 - Knight (MP) to OpenStax S18; Openstax to Knight (MP) S19
University of North Carolina-Greensboro	333	Mastering; Lon Capa dropped F16	1			INDIV Choice - Giancoli (MP), OpenStax (LC) to Giancoli (MP) F16; Giancoli (MP) to OpenStax S19
University of Saskatchewan	703	WebAssign	2			1 - Cutnell to Serway (WA) S17; 2 - Serway (WA) to Janzen (Free PDF) S18 (enr = 200)
University of Tennessee-Chattanooga	327	WileyPLUS to WebAssign S18; WebAssign to WileyPLUS S19	1			Cutnell(WP) to OpenStax (WA) S18; OpenStax (WA) to Cutnell (WP) S19

School Name	Enroll	Tech Details	Tracks	Used One Throughout	Changed Once	Multiple Changes
University of Tennessee-Knoxville	1,531	1-Webassign dropped S16	2			1- *INDIVIDUAL CHOICE Kinetic, Serway(WA), Newman to OpenStax S16 (enr=1,100); 2- Giancoli to Salu (enr=100)
University of Toledo	472	Mastering dropped F16	2	2 - OpenStax		1- Wilson to Coletta F15; Coletta to Wilson S16 (enr=300)
University of Utah	818	WebAssign	1			Cutnell (WA) to Knight S18; Knight to Cutnell (WA) F18
University of Washington	2,424		1			Walker to OpenStax S16; OpenStax to Walker F16; Walker to Knight (F17)
University of Waterloo	1,830	Mastering to WebAssign F15	1			Walker (MP) to Serway (WA) F15; Serway (WA) to OpenStax W18; OpenStax to Serway (WA) F18
University of Wisconsin-Milwaukee	1,308		2			1 - Cutnell to Knight F18; 2 - Franklin (Bio) to Serway (S19)
Wayne State University	1,710	Webassign	1			Giambattista (WA) to Serway (WA) F15; Serway to Redish (WA) F16; Redish (WA) to OpenStax (WA) W19
Western Kentucky University	243	Mastering	2			Giancoli(MP) to OpenStax S18; OpenStax to Giancoli (MP) S19

4. Schools with individual instructor choice  
15 schools (5%)

School Name	Enroll	Tech Details	Tracks	Used One Throughout	Changed Once	Multiple Changes
Arkansas State University	338		1			IC - OpenStax; Serway
Brigham Young University	1,446		1			First term IC - Serway, Knight; Second term Serway
Fordham University	756	IC Mastering; WileyPLUS	1			IC Cutnell (WP) & Giancoli (MP)
Indiana University	975		1			IC - Knight (MP); Giancoli (MP)
Louisiana State University	2,446	WileyPLUS; Mastering	1			IC - Cutnell (WP); Young (author in dept) (MP)
New Mexico State University	479	1 - Mastering; 2 - WebAssign	2	2 - Walker(MP) (enr = 160)		1 - IC Deantonio; OpenStax (WA); Walker (MP)
North Carolina State University	1,464	Webassign	1			IC -Serway (WA); OpenStax (WA)
Rutgers University	2,612	3 - Mastering; 4- WebAssign	4	2- Cutnell (350); 3 - Etkina (MP) (enr=700); 4-Serway (WA)		1 - IC - Walker, Cutnell (enr=1500)
SUNY Buffalo	1,432	Webassign; Mastering	1			IC - Serway(WA); Young (MP); Walker (MP); OpenStax
University of Central Florida	2,989	INDIV CHOICE - Mastering, WebAssign	1			IC -Knight(MP); Cutnell(WA); Young (MP)
University of Colorado-Denver	1,210	INDIV CHOICE - Mastering, Connect, Sapling	1			IC - Giambattista(MHC); Knight(MP); Openstax (Sapling)
University of Missouri-Columbia	1,057	Mastering	1			IC - Etkina (MP) & Walker (MP)

School Name	Enroll	Tech Details	Tracks	Used One Throughout	Changed Once	Multiple Changes
University of North Florida	515	IC - Mastering & Sapling	1			IC - Knight (MP) & Openstax (Sap)
University of Texas Rio Grande Valley-Brownsville	229	IC - Mastering & Quest	1			IC - Serway (Quest), Walker (MP), OpenStax (Quest)
University of Texas-Arlington	1,418	Mastering & Expert TA	1			IC - Giancoli (MP) & OpenStax (ExpTA)

**TABLE B2**  
**Algebra-Based Physics Market**  
**Volatility Grid: Summary of Adoptions Changes by Title**  
**Fall 2014 to Spring 2019**

*PLEASE NOTE: The following table reflects all the adoption changes in this market that occurred in the NAVSTEM schools over the past 5 years. Often there were multiple changes in a single course and often schools changed back to previous adoptions. Each change was tallied below. So if a school changed from Cutnell to Knight, and then back to Cutnell again, this would be shown as two adoption changes.*

To:  From:	Total	Cutnell (Wiley)	Etkina (Pearson)	Freedman (WHF)	Giambattista (MH)	Giancoli (Pearson)	Giordano (Cengage)	Knight (Pearson)	OpenStax	Rex (Pearson)	Ruskell (WHF)	Serway (Cengage)	Walker (Pearson)	Wilson (Pearson)	Young (Pearson)
Cutnell (Wiley)	19		1	1		2		5	5			2	2		1
Etkina (Pearson)	1							1							
Freedman (WHF)	3	1											2		
Giambattista (MH)	12		1	1				1	3			4	1		1
Giancoli (Pearson)	17	3	1	1				3	8				1		
Giordano (Cengage)	7	1	1					2	1		1		1		
Knight (Pearson)	17	3		2	1				6				2		3
OpenStax	17	2			2	3		4			1	2	3		
Rex (Pearson)	2											1	1		
Ruskell (WHF)	1						1								
Serway (Cengage)	17	2	1	1		1		1	8				1		2
Walker (Pearson)	20			2		2		5	6			5			
Wilson (Pearson)	8	2				1		1							4
Young (Pearson)	15	2	1		2			5	2			2	1		
<b>Total</b>	<b>156</b>	<b>16</b>	<b>6</b>	<b>8</b>	<b>5</b>	<b>9</b>	<b>1</b>	<b>28</b>	<b>39</b>	<b>0</b>	<b>2</b>	<b>16</b>	<b>15</b>	<b>0</b>	<b>11</b>

TABLE B3  
Algebra-Based Physics  
Summary of Adoption Changes by Publisher  
Fall 2014 to Spring 2019

<b>To: From:</b>	<b>Total</b>	<b>Cengage</b>	<b>McGraw-Hill</b>	<b>OpenStax</b>	<b>Pearson</b>	<b>WH Freeman</b>	<b>Wiley</b>
<b>Cengage</b>	<b>24</b>			9	10	2	3
<b>McGraw-Hill</b>	<b>12</b>	4		3	4	1	
<b>Openstax</b>	<b>17</b>	2	2		10	1	2
<b>Pearson</b>	<b>80</b>	8	3	22	32	5	10
<b>WH Freeman</b>	<b>4</b>	1			2		1
<b>Wiley</b>	<b>19</b>	2		5	11	1	
<b>Total</b>	<b>140</b>	<b>17</b>	<b>5</b>	<b>39</b>	<b>69</b>	<b>10</b>	<b>16</b>



TABLE B4  
Algebra-Based Physics  
Brand Loyalty Analysis for Leading Texts/Author Families  
Fall 2014 to Spring 2019

Textbook	Total Used Text During Period	Still Using Text at End of Period		Not Using Text at End of Period	
	# of Schools	#	%	#	%
<b>Knight</b>	78	64	82%	14	17.9%
<b>Serway</b>	57	46	81%	11	19.3%
<b>Openstax</b>	70	56	80%	14	20.0%
<b>Giancoli</b>	75	60	80%	15	20.0%
<b>Cutnell</b>	75	58	77%	17	22.7%
<b>Walker</b>	51	33	65%	18	35.3%
<b>Young</b>	32	20	63%	12	37.5%
<b>Giambattista</b>	21	8	38%	13	61.9%

**APPENDIX A**  
**ALGEBRA-BASED PHYSICS TOP 50 SCHOOLS BY ENROLLMENT**  
**Fall 2014 to Spring 2019**

School Name	Enroll	Tech Details	Tracks	Used One Throughout	Changed Once	Multiple Changes
University of California-Los Angeles	5,656	Mastering	1	Knight -custom (MP)		
University of Guelph	3,484	2-WebAssign	2	1 - Williams (Bio); 2 - McFarland (WA)		
University of Central Florida	2,989	INDIV CHOICE - Mastering, WebAssign	1			IC -Knight(MP); Cutnell(WA); Young (MP)
University of Houston	2,960	Mastering	1	Walker (MP)		
University of California-Riverside	2,717	Mastering	1	Knight - custom (MP)		
Ohio State University	2,623	Mastering	1	Giancoli (MP)		
Rutgers University	2,612	3 - Mastering; 4- WebAssign	4	2- Cutnell (350); 3 - Etkina (MP) (enr=700); 4-Serway (WA)		1 - IC - Walker, Cutnell (enr=1500)
University of South Florida	2,586	Mastering to Sapling F18	1		Knight (MP) to Freedman (SAP) F18	
University of California-Santa Barbara	2,556	Sapling	1	Freedman (Sap)		
University of Florida	2,516	1 -WebAssign & Connect to ExpertTA F17; ExpertTA to Mastering F18; 2 - Mastering	1		2- Bueche (Technical Physics) to Giancoli (MP) F18 (enr = 225)	1. Giambattista (WA, MHC) to OpenStax (ExpTA) F17; OpenStax (ExptTA) to Knight (MP) F18
Michigan State University	2,462	Lon Capa	1	Rex (LC)		

School Name	Enroll	Tech Details	Tracks	Used One Throughout	Changed Once	Multiple Changes
Louisiana State University	2,446	WileyPLUS; Mastering	1			IC - Cutnell (WP); Young (author in dept) (MP)
University of Washington	2,424		1			Walker to OpenStax S16; OpenStax to Walker F16; Walker to Knight (F17)
University of Texas-San Antonio	2,408	Webassign	1	Serway (WA)		
University of Wisconsin-Madison	2,088	WebAssign to FlipIT S17 and Mastering (added S18)	1		Serway (WA) to OpenStax (FL & MP) S17	
California Polytechnic State Univ-San Luis Obispo	2,028	Mastering	1	Knight(MP)		
University of Georgia	2,003	IC Mastering; Lon Capa	1	Walker (MP & LC)		
Georgia State University	1,939	Mastering	1	Knight(MP)		
Purdue University	1,900	1 -WebAssign to Mastering S15	1		1- Giordano (WA) to Etkina (MP) S15 (enr=1825)	
University of Waterloo	1,830	Mastering to WebAssign F15	1			Walker (MP) to Serway (WA) F15; Serway (WA) to OpenStax W18; OpenStax to Serway (WA) F18
University of Pittsburgh	1,806	Sapling	1		Cutnell to Openstax (SAP) F18	
University of Massachusetts-Amherst	1,802	Mastering	1	OpenStax to OpenStax (MP) F16		

School Name	Enroll	Tech Details	Tracks	Used One Throughout	Changed Once	Multiple Changes
Wayne State University	1,710	Webassign	1			Giambattista (WA) to Serway (WA) F15; Serway to Redish (WA) F16; Redish (WA) to OpenStax (WA) W19
Virginia Commonwealth University	1,705		1	Walker		
Iowa State University	1,666	1. Mastering & Top Hat; 2. Mastering & Top Hat	2	1 - Giancoli(MP & TH) (enr=1,600)		1 - Walker to Giancoli (MP&TH) F15; Giancoli to Walker (MP&TH) S19 (enr=200)
University of Maryland-Baltimore County	1,666	Mastering	1	Knight (MP)		
Oregon State University	1,591	Mastering	1	Knight(MP)		
Virginia Polytechnic Institute	1,573	WebAssign to WileyPLUS F18	1		Giordano(WA) to Cutnell (WP) F18	
University of Tennessee-Knoxville	1,531	1-Webassign dropped S16	2			1- *INDIVIDUAL CHOICE Kinetic, Serway(WA), Newman to OpenStax S16 (enr=1,100); 2- Giancoli to Salu (enr=100)
University of Arizona	1,524	WileyPLUS	1	Cutnell (WP) & OpenStax		
Penn State University	1,507	Webassign to Expert TA F18	1	Knight (WA) to Knight (ExpTA) F18		
New York City College of Technology	1,477	Mastering dropped F16	1	Young		
North Carolina State University	1,464	Webassign	1			IC -Serway (WA); OpenStax (WA)

School Name	Enroll	Tech Details	Tracks	Used One Throughout	Changed Once	Multiple Changes
Clemson University	1,453	Mastering	1	Walker (MP)		
Temple University	1,451	Mastering	2			1 - Giancoli (MP) to Knight (MP) S18; 2 - Giancoli (MP) to Etkina (MP) F17
Brigham Young University	1,446		1			First term IC - Serway, Knight; Second term Serway
SUNY Buffalo	1,432	Webassign; Mastering	1			IC - Serway(WA); Young (MP); Walker (MP); OpenStax
University of Texas-Arlington	1,418	Mastering & Expert TA	1			IC - Giancoli (MP) & OpenStax (ExpTA)
University of South Carolina	1,414		1	Jones & OpenStax		
West Virginia University	1,407	Webassign	1	Serway (WA)		
University of Arkansas	1,404	2 - Mastering	2			1 - Walker(MP) to Knight F15; 2- Colletta to Giancoli (MP) F17
McGill University	1,398	Lon Capa; Mastering dropped F18	1	Giancoli ( LC)		
Kansas State University	1,374	1-Sapling (enr=1050); 2-WebAssign to Mastering S18 (enr=150)	2	2- Giancoli (WA) to Giancoli (MP) S18 (enr=150)		1- Giancoli(MP) to OpenStax (SAP) S16; OpenStax (SAP) to Ruskell-SAP S19
Colorado State University	1,345	Mastering;WebAssign dropped S16	1		IC - Knight(MP); Giambattista(WA); Young (MP) to Knight (MP) S16	
University of Toronto	1,343	Mastering	1		Wolfson Essen (calc-based) to Etkina (MP) F18	

School Name	Enroll	Tech Details	Tracks	Used One Throughout	Changed Once	Multiple Changes
Northern Arizona University	1,336	Mastering to WileyPLUS - F18	1		Knight(MP) to Cutnell (WP) F18	
Arizona State University	1,311	Mastering to Webassign F16;WebAssign to Mastering S17	1			Young (MP) to Serway (WA) F16; Serway (WA) to Young (MP) S17
University of Pennsylvania	1,308	Mastering	1	Giancoli (MP)		
University of Wisconsin-Milwaukee	1,308		2			1 - Cutnell to Knight F18; 2 - Franklin (Bio) to Serway (S19)

APPENDIX B  
ALL NAVSTEM SCHOOLS – ALPHABETICAL LISTING  
Fall 2014 to Spring 2019

School Name	Enroll	Tech Details	Tracks	Used One Throughout	Changed Once	Multiple Changes
Alabama A&M University	31	WileyPlus dropped F17	1	Cutnell		
Alfred State College	449		2	2 - Giancoli	1 - Wilson to Young S18	
Appalachian State University	1,177		1	Giancoli		
Arizona State University	1,311	Mastering to Webassign F16; WebAssign to Mastering S17	1			Young (MP) to Serway (WA) F16; Serway (WA) to Young (MP) S17
Arkansas State University	338		1			IC - OpenStax; Serway
Arkansas Tech University	160	Webassign	1		Walker (WA) to Serway (WA) F18	
Auburn University	1,274	WebAssign Dropped F17	1		Serway (WA) to Openstax S17	
Ball State University	468	Mastering dropped F15; WebAssign added F18	1			Serway to Young(MP) F14; Young (MP) to Giambattista F15; Giambattista to Serway (WA) F18
Baylor University	980	Mastering	1	Giancoli(MP)		
Binghamton University	687	Mastering	1	Giancoli(MP)		
Boise State University	504	Mastering	1	Knight(MP)		
Boston College	252		1	Knight		
Boston University	1,111		1	Duffy		

School Name	Enroll	Tech Details	Tracks	Used One Throughout	Changed Once	Multiple Changes
Bowling Green State University	126	Mastering	1		Giordano to Knight (MP) - F18	
Bradley University	462	Mastering	1	Young (MP)		
Brigham Young University	1,446		1			First term IC - Serway, Knight; Second term Serway
Brooklyn College of CUNY	880		1	Walker & Openstax		
California Polytechnic State Univ- San Luis Obispo	2,028	Mastering	1	Knight(MP)		
California State Polytechnic University-Pomona	1,255	Mastering to ExpertTA F18	1		Walker (MP) to OpenStax (ExpTA) F18	
California State University-Chico	858	Mastering dropped S17	1		Young(MP) to Etkina F16	
California State University- Dominguez Hills	504	WileyPLUS	1	Cutnell(WP)		
California State University-Fresno	691	WebAssign	1	Serway (WA)		
California State University- Fullerton	571	Mastering to WileyPLUS F15	1		Wilson (MP) to Cutnell (WP) F15	
California State University-Long Beach	1,056	WileyPLUS	1			Cutnell (WP) to OpenStax (F16); OpenStax to Cutnell (WP) S17
California State University-Los Angeles	1,108	Webassign to Sapling F18	1		Serway(WA) to Freedman (SAP) F18	
California State University- Northridge	940	Mastering	1		Young to Walker (MP) S15	



School Name	Enroll	Tech Details	Tracks	Used One Throughout	Changed Once	Multiple Changes
California State University-Sacramento	981	sem 1 - Sapling added S19; sem 2- Mastering to Expert TA S18	1			sem 1- Young (MP)to Knight (MP) S15; Knight to Young F17; Young to Young (SAP) S19; sem 2- OpenStax to Knight(MP)S15; Knight to Young (MP) S17; Young (MP) to OpenStax (ExpTA) S18
California State University-San Bernardino	884	WileyPLUS to Mastering F17	1			Young to Cutnell (WP) S16; Cutnell (WP) to Young (MP) F17
Carleton University	872	Connect dropped F15	1	Giambattista-Phys		
Case Western Reserve University	341		1	Cutnell		
Catholic University of America	29		1	Giancoli		
Central Michigan University	787	Mastering & TopHat to WebAssign F18	1		Rex (MP & TH) to Serway (WA) F18	
City University of New York-City College	950	1 - WileyPLUS	2	1-Cutnell(WP); 2; Giancoli		
Clarion University	103	WileyPLUS to WebAssign F15	1		Cutnell (WP) to Serway (WA) F15	
Clarkson University	99		1		Cutnell to Franklin-Bio F15	
Clemson University	1,453	Mastering	1	Walker (MP)		
Cleveland State University	530	WileyPLUS	1	Cutnell(WP)		

School Name	Enroll	Tech Details	Tracks	Used One Throughout	Changed Once	Multiple Changes
Colorado State University	1,345	Mastering;WebAssign dropped S16	1		IC - Knight(MP); Giambattista(WA); Young (MP) to Knight (MP) S16	
Columbus State University	152	Mastering	1		Knight(MP) & Openstax(Sap & TH) to Knight (MP) S17	
Cornell University	382	Connect	1	Giambattista(MHC)		
Creighton University	433	Sapling to FlipIT S16	1		Knight to Freedman (SAP) F15; Freedman (SAP) to Freedman (FL) S16	
Dalhousie University	444	Mastering to Top Hat F18	1	Knight (MP) to Knight (TH) F18		
DePaul University	504		1	Knight		
Drexel University	1,195	1&3 - Webassign- dropped F14	3	1 & 3- Serway	2-Giancoli to Cutnell S15	
Eastern Kentucky University	333	WebAssign	1	Serway (WA)		
Eastern Michigan University	967	Mastering dropped F17	1			sem 1- Freedman to Walker (MP) W15; sem 2- Cutnell to Walker W15
Embry Riddle University (Florida)	264	WebAssign	1	Serway -E (WA)		
Embry-Riddle Aeronautical University-Prescott	264		1	Cutnell		

School Name	Enroll	Tech Details	Tracks	Used One Throughout	Changed Once	Multiple Changes
Fairleigh Dickinson University	46		1	Giancoli		
Ferris State University	658	Mastering-dropped S15	1	Wilson		
Florida Atlantic University	652	WileyPLUS	1	Cutnell(WP)		
Florida Gulf Coast University	468	Webassign	1	Serway(WA)		
Florida International University	1,117	Mastering	1	Young(MP)		
Florida State University	1,284	Mastering	1			IC Walker (MP); Giordano to Walker (MP) F16; Walker (MP) to OpenStax F17
Fordham University	756	IC Mastering; WileyPLUS	1			IC Cutnell (WP) & Giancoli (MP)
Gannon University	169	Mastering	1	Giancoli(MP)		
George Mason University	653	Mastering	1	Giancoli(MP)		
George Washington University	872	Mastering	1	Knight (MP)		
Georgia Southern University	832	Mastering	1			Young(MP) to Knight (MP) F16; Knight (MP) to Knight (MP) & OpenStax F18
Georgia State University	1,939	Mastering	1	Knight(MP)		
Gonzaga University	132		1		Coletta to Cutnell S15	
Grambling State University	340	Mastering dropped S16	1		Wilson(MP) to Young F15	
Grand Valley State University	1,159	Mastering to Connect F15; Connect to Mastering F17	1			Young (MP) to Giambattista (MHC) F15; Giambattista (MHC) to Young (MP) F17

School Name	Enroll	Tech Details	Tracks	Used One Throughout	Changed Once	Multiple Changes
Howard University	547	WileyPLUS	2	1-Cutnell(WP); 2- Salu		
Humboldt State University	250		1	OpenStax		
Hunter College of CUNY	1,199		1	Giancoli		
Idaho State University	217	WebAssign to Top Hat F17	1	Cutnell(WA) to Cutnell (TH) F17		
Illinois Institute of Technology	66		1	Salu		
Illinois State University	465		1	Cutnell		
Indiana University	975		1			IC - Knight (MP); Giancoli (MP)
Indiana University of Pennsylvania	252	Mastering	1	Young (MP)		
Indiana University, Purdue University-Indianapolis	368	WebAssign dropped F17	0	Giancoli		
Iowa State University	1,666	1. Mastering & Top Hat; 2. Mastering & Top Hat	2	1 - Giancoli(MP & TH) (enr=1,600)		1 - Walker to Giancoli (MP&TH) F15; Giancoli to Walker (MP&TH) S19 (enr=200)
Jackson State University	186	Mastering	1		Wilson (MP) to Young (MP) F17	
James Madison University	498	WebAssign	1			Giambattista to OpenStax F16; OpenStax to Giambattista F17; Giambattista to Serway (WA) F18
John Brown University	132		1	Giancoli		

School Name	Enroll	Tech Details	Tracks	Used One Throughout	Changed Once	Multiple Changes
Kansas State University	1,374	1-Sapling (enr=1050); 2-WebAssign to Mastering S18 (enr=150)	2	2- Giancoli (WA) to Giancoli (MP) S18 (enr=150)		1- Giancoli(MP) to OpenStax (SAP) S16; OpenStax (SAP) to Ruskell-SAP S19
Kennesaw State University	1,067	Webassign	1		IC Giancoli(MP); Openstax; Cutnell (WA) to Cutnell (WA) F15	
Kent State University	739	Mastering	1	Walker(MP)		
Lafayette College	56	Mastering	1		Walker (MP) to Knight (MP) F16	
Lamar University	475	Mastering	2		1- Wilson (MP) to Knight (MP) F17; 2 - Wilson (MP) to Knight (MP) F17	
Lawrence Technological University	196	1-WileyPLUS; 2-WebAssign	2	1- Cutnell (WP)	2- Kinetic to OpenStax (WA) F17	
Louisiana State University	2,446	WileyPLUS; Mastering	1			IC - Cutnell (WP); Young (author in dept) (MP)
Louisiana Tech University	677	WileyPLUS	1	Cutnell(WP)		
Loyola Marymount University	132		1	Knight		
Loyola University	519	Mastering	1			Young (MP) to Knight (MP) F16; Knight (MP) to Young (MP) S17; Second term only - Young (MP) to Hewitt Conceptual Physics S19
Manhattan College	73	Mastering Dropped F15	1		IC - Cutnell, Serway, Giancoli to Rex F15	

School Name	Enroll	Tech Details	Tracks	Used One Throughout	Changed Once	Multiple Changes
Marquette University	132	Connect & Aleks	1		Giambattista(MHC&Aleks) to Etkina (MC) F18	
McGill University	1,398	Lon Capa; Mastering dropped F18	1	Giancoli ( LC)		
McMaster University	1,260	WileyPLUS added F18	2	1- Cutnell (WP); 2- Zinke-Allmang (w/Bio)		
Memorial University of Newfoundland	504	Mastering	1		Knight (MP) to Walker (MP) F17	
Mercer University	396	Webassign to Mastering S18	1			Walker to Openstax(WA) S15; OpenStax (WA) to Walker (WA) F15; Walker (WA) to Knight (MP) S18
Miami University	574	Mastering	1	Knight (MP)		
Michigan State University	2,462	Lon Capa	1	Rex (LC)		
Michigan Technological University	229	1-Connect ; 2- WebAssign	1	1 - Giambattista (MHC)	2- Giordano(WA) to OpenStax (WA) F15	
Middle Georgia State College	148	Mastering to WebAssign F16;WebAssign to Mastering F17	2			Giancoli(MP) to OpenStax (WA) F16; OpenStax to Giancoli (MP) F17
Middle Tennessee State University	765	Mastering	1	Knight (MP)		
Minnesota State University-Mankato	408	WileyPLUS	1	Cutnell(WP)		
Mississippi State University	969	Mastering	1	Giancoli(MP)		

School Name	Enroll	Tech Details	Tracks	Used One Throughout	Changed Once	Multiple Changes
Missouri University of Science & Technology	91		1	Knight		
Montana College of Mineral Science & Technology	84		1		Hellings to OpenStax F16	
Montana State University	1,067		1	Hellings		
Montclair State University	494	Webassign	1	Serway (WA)		
New Jersey Institute of Technology	497	Mastering	1	Giancoli (MP)		
New Mexico State University	479	1 - Mastering; 2 - WebAssign	2	2 - Walker(MP) (enr = 160)		1 - IC Deantonio; OpenStax (WA); Walker (MP)
New York City College of Technology	1,477	Mastering dropped F16	1	Young		
New York Institute of Technology	301		2	1 - Serway; 2- Giancoli		
North Carolina A&T State University	596	Webassign; WileyPLUS dropped F18	1	1 Cutnell (WA)		
North Carolina State University	1,464	Webassign	1			IC -Serway (WA); OpenStax (WA)
North Dakota State University	641	FlipIT dropped F18	1			Giordano to Ruskell (FL) S18; Ruskell (FL) to Giordano F18
Northeastern University	797	Mastering	1	Giancoli (MP)		
Northern Arizona University	1,336	Mastering to WileyPLUS - F18	1		Knight(MP) to Cutnell (WP) F18	

School Name	Enroll	Tech Details	Tracks	Used One Throughout	Changed Once	Multiple Changes
Northern Illinois University	378	Connect to WebAssign F17	1			Giambattista (MHC&WA) to OpenStax F15; OpenStax to Giambattista (MHC) S16; Giambattista (MHC) to Serway (WA) F17
Northern Kentucky University	1,260		1	Cutnell		
Northwestern University	631	Mastering	1		Giancoli to Knight (MP) F18	
Norwich University	128	Mastering	1	Giancoli (MP)		
Nova Southeastern University	585	Mastering	1	Giancoli(MP)		
Oakland University	746	Webassign	1	Serway(WA)		
Ohio Northern University	53	Mastering-dropped S15	1		Wilson to Giancoli F15	
Ohio State University	2,623	Mastering	1	Giancoli (MP)		
Ohio University	904		1		Cutnell to Openstax F15	
Oklahoma State University	1,256	Mastering to Expert TA S17	1		Giancoli(MP) to OpenStax (ExpTA) S17	
Old Dominion University	802	Mastering	1	Young(MP)		
Oregon State University	1,591	Mastering	1	Knight(MP)		
Penn State University	1,507	Webassign to Expert TA F18	1	Knight (WA) to Knight (ExpTA) F18		
Penn State University-Behrend	421	WebAssign to Mastering S18	1		OpenStax (WA) to Giancoli (MP) S18	



School Name	Enroll	Tech Details	Tracks	Used One Throughout	Changed Once	Multiple Changes
Portland State University	815	Mastering to FlipIT F16; FlipIT dropped F18	1			Walker (MP) to Freedman (FL) F16; Freedman (FL) to Walker (FL) S18; Walker (FL) to OpenStax F18
Prairie View A&M University	193		1	term1: Rex, term2 Serway		
Princeton University	200	WileyPlus dropped F16	1		Cutnell(WP) to Etkina F16	
Purdue University	1,900	1 -WebAssign to Mastering S15	1		1- Giordano (WA) to Etkina (MP) S15 (enr=1825)	
Purdue University Northwest	234	Webassign to Mastering F17; Mastering dropped F18	1			Serway(WA) to Etkina S17; Etkina to Knight F17
Purdue University-Fort Wayne	356		1		Knight to OpenStax S17	
Queens College of CUNY	863	Mastering	1	Young (MP)		
Queens University	252	Webassign to WileyPLUS F18	1		Serway(WA) to Cutnell (WP) F18	
Rochester Institute of Technology	900	Mastering	1		Knight(MP) to Walker (MP) S15	
Roger Williams University	218	WebAssign	1			Updike to Serway (WA) S16; Serway to OpenStax (WA) S17; Opentax (WA) to Serway (WA) F17

School Name	Enroll	Tech Details	Tracks	Used One Throughout	Changed Once	Multiple Changes
Rowan University	469	Mastering dropped F17	1			Walker (MP) to Knight (MP) F15; Knight (MP) to OpenStax F17
Rutgers University	2,612	3 - Mastering; 4- WebAssign	4	2- Cutnell (350); 3 - Etkina (MP) (enr=700); 4-Serway (WA)		1 - IC - Walker, Cutnell (enr=1500)
Ryerson University	436	1 - Mastering to WileyPLUS W18; 2 - Mastering	2	2 - Giancoli (MP)	1 - Giancoli (MP) to Cutnell; Cutnell to Cutnell (WP) W18	
Saginaw Valley State University	330	WileyPLUS dropped F18	1		Young to Cutnell F15	
Sam Houston State University	734	Mastering	1	Walker (MP)		
San Francisco State University	1,149	Mastering	1	Walker (MP)		
San Jose State University	639	Webassign to Mastering S17	1			sem 1 - Serway to Potter S17; sem 2 - Serway(WA) to Knight (MP) S17
Seattle University	194	Mastering F16	1	Giancoli (MP)		
South Dakota School of Mines & Technology	79	WileyPLUS	1	Cutnell WP)		
South Dakota State University	439		1		Walker to Serway - F18	
Southeastern Oklahoma State University	64	Mastering dropped F15	1		Young (MP) to Knight F15	

School Name	Enroll	Tech Details	Tracks	Used One Throughout	Changed Once	Multiple Changes
Southern Illinois University-Carbondale	289	WileyPlus dropped F17	1	Cutnell (w/OpenStax some terms)		
Southern University	103	Mastering dropped S16	1	Giancoli		
St Cloud State University	357	Webassign to Mastering F18	1		Serway (WA) to Giancoli (MP) F18	
St John's University	252	Webassign to Mastering F17; Mastering to WebAssign F18	1			Serway (WA) to Walker (MP) F17; Walker (MP) to Serway (WA) F18
St Louis University	816	Mastering dropped F15	2	2- Nikolo	1 - Young (MP) to Knight F15	
Stanford University	287	Mastering	1	Giancoli (MP)		
Stevens Institute of Technology	129	WebAssign	1	Giordano (WA)		
SUNY Albany	330	WileyPLUS	1	Cutnell(WP)		
SUNY Buffalo	1,432	Webassign; Mastering	1			IC - Serway(WA); Young (MP); Walker (MP); OpenStax
SUNY Stony Brook	743	Mastering	1	Knight(MP)		
Syracuse University	463	Mastering to Connect S15	1		Knight(MP) to Giambattista (MHC) S15	
Temple University	1,451	Mastering	2			1 - Giancoli (MP) to Knight (MP) S18; 2 - Giancoli (MP) to Etkina (MP) F17
Tennessee State University	241	Connect to Expert TA F18	1		Giambattista (MHC) to Walker (ExpTA) F18	

School Name	Enroll	Tech Details	Tracks	Used One Throughout	Changed Once	Multiple Changes
Texas A&M University	1,265	Webassign & Mastering	1	Young (WA&MP)		
Texas A&M University-Corpus Christi	506	WebAssign	1	Serway (WA)		
Texas A&M University-Kingsville	242		1	OpenStax		
Texas Christian University	229	WileyPLUS	1		Serway to Cutnell (WP) F16	
Texas Tech University	1,048	Webassign to Mastering F17; Mastering dropped S19	1			Giordano (WA) to Walker (MP) F17; Walker (MP) to OpenStax S19
The Citadel	316	Mastering	1	Giancoli (MP)		
Towson University	623		1	Wilson		
Troy University	630	WebAssign	1		Serway(WA) to OpenStax (WA) F15	
Tufts University	385	Sapling	1		Walker to Freedman (SAP) F18	
Tulane University	315	1 - WileyPLUS; 2 - WileyPLUS to Mastering S16	1	1 - Cutnell(WP)	2 - Cutnell (WP) to Giancoli (MP) S16	
Tuskegee University	162		1		Giancoli to OpenStax F15	
University of Akron	903	Mastering	1	Wilson (MP)		
University of Alabama	787	Mastering	1	Giancoli (MP)		
University of Alabama-Birmingham	926	Webassign	1	Cutnell (WA)		

School Name	Enroll	Tech Details	Tracks	Used One Throughout	Changed Once	Multiple Changes
University of Alabama-Huntsville	269	WileyPLUS	1	Cutnell (WP)		
University of Alaska-Anchorage	523	Mastering to WebAssign S17; WebAssign to Mastering F18	1			Knight (MP) to Openstax (WA) S17; Openstax (WA) to Knight (MP) F18
University of Alaska-Fairbanks	132	Mastering	1	Giancoli (MP)		
University of Alberta	945	Mastering	1	Walker (MP)		
University of Arizona	1,524	WileyPLUS	1	Cutnell (WP) & OpenStax		
University of Arkansas	1,404	2 - Mastering	2			1 - Walker(MP) to Knight F15; 2- Colletta to Giancoli (MP) F17
University of British Columbia	795	Mastering dropped F15	1			Knight(MP) to OpenStax F15; OpenStax to Reinsenber (notes) F16
University of California-Davis	559	Mastering	1	Giancoli (MP)		
University of California-Los Angeles	5,656	Mastering	1	Knight -custom (MP)		
University of California-Riverside	2,717	Mastering	1	Knight - custom (MP)		
University of California-Santa Barbara	2,556	Sapling	1	Freedman (Sap)		
University of Central Florida	2,989	INDIV CHOICE - Mastering, WebAssign	1			IC -Knight(MP); Cutnell(WA); Young (MP)

School Name	Enroll	Tech Details	Tracks	Used One Throughout	Changed Once	Multiple Changes
University of Central Missouri	196	Expert TA	1	Giambattista (ExpTA)		
University of Cincinnati	993	Mastering to WebAssign F18	1		Walker(MP) to Serway (WA) F18	
University of Colorado-Boulder	1,119	1 - Mastering to WileyPLUS S18; WileyPLUS to Sapling F18 2 - Mastering	2	2- Knight (MP)		1 - Giancoli (MP) to Cutnell (WP) S18; Cutnell (WP) to Freedman (SAP) F18
University of Colorado-Colorado Springs	132		1	Giancoli		
University of Colorado-Denver	1,210	INDIV CHOICE - Mastering, Connect, Sapling	1			IC - Giambattista(MHC); Knight(MP); Openstax (Sapling)
University of Connecticut	675	IC - Mastering; Sapling to Mastering S18	1		Rex (MP or Sapling) to Walker (MP) S18	
University of Dayton	499	Mastering	1	Giancoli (MP)		
University of Delaware	1,013	Mastering	1	Walker (MP)		
University of Denver	395	WileyPLUS	1	Cutnell (WP)		
University of Florida	2,516	1 -WebAssign & Connect to ExpertTA F17; ExpertTA to Mastering F18; 2 - Mastering	1		2- Bueche (Technical Physics) to Giancoli (MP) F18 (enr = 225)	1. Giambattista (WA, MHC) to OpenStax (ExpTA) F17; OpenStax (ExptTA) to Knight (MP) F18
University of Georgia	2,003	IC Mastering; Lon Capa	1	Walker (MP & LC)		
University of Guelph	3,484	2-WebAssign	2	1 - Williams (Bio); 2 - McFarland (WA)		
University of Hartford	217		1	OpenStax		

School Name	Enroll	Tech Details	Tracks	Used One Throughout	Changed Once	Multiple Changes
University of Hawaii-Manoa	720	Mastering dropped F16	1		Young(MP) to OpenStax F16	
University of Houston	2,960	Mastering	1	Walker (MP)		
University of Houston-Clear Lake	220	Mastering dropped S19	1		Giancoli (MP) to Openstax S19	
University of Idaho	445	WileyPLUS	1	Cutnell (WP)		
University of Illinois at Urbana-Champaign	1,282	FlipIT (Sapling dropped S18)	1		Giambattista to Freedman (FL) F16	
University of Illinois-Chicago	868	Mastering	1	Knight (MP)		
University of Iowa	838	WileyPLUS	1	Cutnell (WP)		
University of Kansas	997	Mastering to Sapling S16	1		Giancoli (MP) to Openstax (SAP) S16	
University of Kentucky	1,210	Webassign	1	Serway (WA)		
University of Louisiana at Lafayette	936	WebAssign to WileyPLUS F15	1	Cutnell (WP)		
University of Louisville	485	Mastering dropped S18	1			Serway to Young (MP) S16; Young (MP) to Serway S18
University of Maine	516	Mastering	1	Knight (MP)		
University of Manitoba	690	WileyPLUS	1	Cutnell (WP)		
University of Maryland	878	Mastering & Expert TA	1	Knight (MP & ExpTA)		
University of Maryland-Baltimore County	1,666	Mastering	1	Knight (MP)		
University of Massachusetts-Amherst	1,802	Mastering	1	OpenStax to OpenStax (MP) F16		
University of Massachusetts-Boston	384		1	Giancoli		

School Name	Enroll	Tech Details	Tracks	Used One Throughout	Changed Once	Multiple Changes
University of Massachusetts-Lowell	518	Mastering to FlipIT & Sapling F18	1		Giancoli (MP) to Freedman (FL&SAP) F18	
University of Memphis	329	INDIV Choice - WebAssign, WileyPLUS to WileyPLUS F17	1		IC - Serway (WA), OpenStax (WA), Cutnell (WP) to Cutnell (WP) F17	
University of Miami	731	Mastering	2	1- Walker(MP); 2- Salu		
University of Michigan-Ann Arbor	218		1	Salu		
University of Michigan-Dearborn	465	WileyPlus dropped F17	1	Cutnell		
University of Minnesota	861		1	1 - Knight; 2 - OpenStax		
University of Minnesota-Duluth	308	Mastering dropped S17	1	Walker		
University of Mississippi	723	Mastering (MP&TopHat)	1	Giancoli(MP & TH)		
University of Missouri-Columbia	1,057	Mastering	1			IC - Etkina (MP) & Walker (MP)
University of Missouri-Kansas City	448	Mastering to WileyPLUS S17; WileyPLUS to Expert TA S18	1			Wilson (MP) to Cutnell (WP) S17; Cutnell (WP) to OpenStax (ExpTa) S18
University of Missouri-St. Louis	370		1	Walker		



School Name	Enroll	Tech Details	Tracks	Used One Throughout	Changed Once	Multiple Changes
University of Nebraska-Lincoln	963	1-Webassign; 2-Mastering dropped S17	2	1- Cutnell(WA) (enr=675)		2-Walker(MP) to Giancoli(MP) (enr=200) S15; Giancoli (MP) to OpenStax S17; Openstax to Walker S18
University of Nebraska-Omaha	786	1 - Mastering	2	1- Young (MP) (enr=300); 2- Wall (enr=200)		
University of Nevada-Las Vegas	1,078	sem 1 - WileyPLUS; sem 2 - WileyPLUS to Mastering F15;	1	sem 1 - Cutnell (WP)		sem 2 - Cutnell (WP) to Knight (MP) F15; Knight (MP) to Cutnell F17; Cutnell to Walker (MP) F18
University of Nevada-Reno	1,050	Webassign	1	Serway (WA)		
University of New Hampshire	476	Mastering	1	sem 1 - Knight(MP)		sem2 - Knight (MP) to OpenStax S18; Openstax to Knight (MP) S19
University of New Haven	132		1	Serway		
University of New Mexico	683	Mastering	1	Knight (MP)		
University of New Orleans	329	WileyPLUS to Sapling F15; Sapling to Mastering F17	1		Cutnell (SAP) to Knight (MP) F17	
University of North Carolina-Chapel Hill	1,262	Mastering	1	Knight (MP)		
University of North Carolina-Charlotte	1,259	sem 1 -WebAssign to Expert TA S16; sem 2 -WebAssign	1	Serway (sem 1 - ExpTA; sem 2 - WA)		

School Name	Enroll	Tech Details	Tracks	Used One Throughout	Changed Once	Multiple Changes
University of North Carolina-Greensboro	333	Mastering; Lon Capa dropped F16	1			INDIV Choice - Giancoli (MP), OpenStax (LC) to Giancoli (MP) F16; Giancoli (MP) to OpenStax S19
University of North Dakota	512	WebAssign	2	1 - Serway (WA); 2 - Openstax		
University of North Florida	515	IC - Mastering & Sapling	1			IC - Knight (MP) & Openstax (Sap)
University of North Texas	908	WileyPLUS	1	Cutnell (WP)		
University of Northern Iowa	361	Mastering	1	Knight (MP)		
University of Notre Dame	78	Mastering	1		Wilson (MP) to Young (MP) F18	
University of Oklahoma	1,009	sem1 - Expert TA; sem 2 - IC Expert TA & Mastering	1	Giancoli (sem 1 - ExpTA; sem 2 - IC ExpTA & MP)		
University of Oregon	1,079	Mastering	1		Giancoli (MP) to Knight (MP) F15	
University of Pennsylvania	1,308	Mastering	1	Giancoli (MP)		
University of Pittsburgh	1,806	Sapling	1		Cutnell to Openstax (SAP) F18	
University of Portland	192	Mastering	1	Knight (MP)		
University of Rhode Island	858	WileyPLUS to WebAssign S16; WebAssign to WileyPLUS F17	1		Cutnell(WP) to Cutnell (WA) S16; Cutnell (WA) to Tammara (WP) F17	

School Name	Enroll	Tech Details	Tracks	Used One Throughout	Changed Once	Multiple Changes
University of Saskatchewan	703	WebAssign	2			1 - Cutnell to Serway (WA) S17; 2 - Serway (WA) to Janzen (Free PDF) S18 (enr = 200)
University of Scranton	361	WebAssign	1	Serway (WA)		
University of South Alabama	358	Mastering	1	Walker (MP)		
University of South Carolina	1,414		1	Jones & OpenStax		
University of South Florida	2,586	Mastering to Sapling F18	1		Knight (MP) to Freedman (SAP) F18	
University of Southern California	568	Mastering	2	1- Giancoli (MP) (enr=310); 2- Young (enr=90)		
University of Southern Maine	66		1	Giancoli		
University of Southern Mississippi	376		1		Serway E to Openstax F16	
University of St Thomas	188	Mastering	1	Knight (MP)		
University of Tennessee-Chattanooga	327	WileyPLUS to WebAssign S18; WebAssign to WileyPLUS S19	1			Cutnell(WP) to OpenStax (WA) S18; OpenStax (WA) to Cutnell (WP) S19
University of Tennessee-Knoxville	1,531	1-Webassign dropped S16	2			1- *INDIVIDUAL CHOICE Kinetic, Serway(WA), Newman to OpenStax S16 (enr=1,100); 2- Giancoli to Salu (enr=100)

School Name	Enroll	Tech Details	Tracks	Used One Throughout	Changed Once	Multiple Changes
University of Texas Rio Grande Valley-Brownsville	229	IC - Mastering & Quest	1			IC - Serway (Quest), Walker (MP), OpenStax (Quest)
University of Texas Rio Grande Valley-Edinburg	658	Mastering	1	Walker (MP)		
University of Texas-Arlington	1,418	Mastering & Expert TA	1			IC - Giancoli (MP) & OpenStax (ExpTA)
University of Texas-Austin	1,016	Webassign to Quest F17	1		Serway(WA) to Serway (Quest) F17; Serway (Quest) to OpenStax (Quest S18)	
University of Texas-Dallas	995	Mastering	1	Young (MP)		
University of Texas-El Paso	969	Connect to Mastering F16	1		Giambattista(MHC) to Knight (MP) F16	
University of Texas-San Antonio	2,408	Webassign	1	Serway (WA)		
University of the Pacific	472	WileyPlus dropped F17	1	Cutnell		
University of Toledo	472	Mastering dropped F16	2	2 - OpenStax		1- Wilson to Coletta F15; Coletta to Wilson S16 (enr=300)
University of Toronto	1,343	Mastering	1		Wolfson Essen (calc-based) to Etkina (MP) F18	
University of Tulsa	132	Mastering to Expert TA S17	1	Walker (MP) to Walker (ExpTA) S17		
University of Utah	818	WebAssign	1			Cutnell (WA) to Knight S18; Knight to Cutnell (WA) F18

School Name	Enroll	Tech Details	Tracks	Used One Throughout	Changed Once	Multiple Changes
University of Vermont	355	WileyPLUS to Mastering F15	1		Cutnell (WP) to Knight (MP) F15	
University of Victoria	901	WebAssign	1	Serway (WA)		
University of Virginia	695	Mastering	1	Walker (MP)		
University of Washington	2,424		1			Walker to OpenStax S16; OpenStax to Walker F16; Walker to Knight (F17)
University of Waterloo	1,830	Mastering to WebAssign F15	1			Walker (MP) to Serway (WA) F15; Serway (WA) to OpenStax W18; OpenStax to Serway (WA) F18
University of West Florida	430	Mastering	1	Knight (MP)		
University of Western Ontario	654	WebAssign	1		Zinke-Allmang-Bio (WA) to McFarland (WA) F16	
University of Windsor	252	WileyPLUS	1	Cutnell (WP)		
University of Wisconsin-Madison	2,088	WebAssign to FlipIT S17 and Mastering (added S18)	1		Serway (WA) to OpenStax (FL & MP) S17	
University of Wisconsin-Milwaukee	1,308		2			1 - Cutnell to Knight F18; 2 - Franklin (Bio) to Serway (S19)
University of Wisconsin-Platteville	197		2	1- Cutnell; 2- Serway-E		
University of Wyoming	566	Webassign dropped S17	1		Serway(WA) to OpenStax (WA) F16	
Utah State University	551	Webassign to WileyPLUS F18	1	Cutnell (WA) to Cutnell (WP) F18		

School Name	Enroll	Tech Details	Tracks	Used One Throughout	Changed Once	Multiple Changes
Utah Valley University	592	Mastering	1	Knight (MP)		
Valparaiso University	70	Mastering	1	Walker (MP)		
Virginia Commonwealth University	1,705		1	Walker		
Virginia Military Institute	132	Mastering dropped F16	1		Cutnell to Giancoli F15	
Virginia Polytechnic Institute	1,573	WebAssign to WileyPLUS F18	1		Giordano(WA) to Cutnell (WP) F18	
Virginia State University	293	Webassign	1	Serway (WA)		
Walla Walla University	137		1	Giancoli		
Washington State University	912	Mastering dropped F15; WebAssign added S19	1		Knight (MP) to OpenStax (WA) F15	
Wayne State University	1,710	Webassign	1			Giambattista (WA) to Serway (WA) F15; Serway to Redish (WA) F16; Redish (WA) to OpenStax (WA) W19
Weber State University	198	Mastering dropped S16	1		IC - Knight, Openstax to OpenStax S17	
West Virginia University	1,407	Webassign	1	Serway (WA)		
Western Illinois University	56		1	Wilson		
Western Kentucky University	243	Mastering	2			Giancoli(MP) to OpenStax S18; OpenStax to Giancoli (MP) S19
Western Michigan University	344	WebAssign	1	Serway (WA)		

School Name	Enroll	Tech Details	Tracks	Used One Throughout	Changed Once	Multiple Changes
Western New England College	132	Mastering	1	Knight (MP)		
Western Washington University	715	Webassign to Mastering F17	1		Giordano(WA) to Knight (MP) F17	
Wichita State University	293	WebAssign to WileyPLUS F15	1		Freedman (WA) to Cutnell (WP) F15	
Widener University	198		1	Knight		
Williams College	132		1	Giancoli		
Wright State University	646	Mastering	1	Giancoli (MP)		
York College of Pennsylvania	102	Mastering	1	Giancoli (MP)		
York University	218	WebAssign	1		Serway (WA) to McFarland (WA) F18	
Youngstown State University	304	Mastering	2	1 - Giancoli (MP) 2- Knight (enr=75)		