

MUS 2-year Education Review

Presented to the 2-year Education Restructuring Commission

November 2019

Office of the Commissioner of Higher Education

MUS 2-year Review

TOPICS

CTE Profile: *What is Career & Technical Education (CTE)?*

Definition | Enrollment | Degrees/Certificates | Trends in Enrollment & Degree Production | Career Pathways

Cost of CTE: *What does it cost to educate a student?*

Educational Revenue per Student Comparisons | Peer Data | National Trends

MUS CTE Initiatives: *2-year education in the MUS*

Recent History | Tuition & Fees | Program Specific Focus (Nursing)

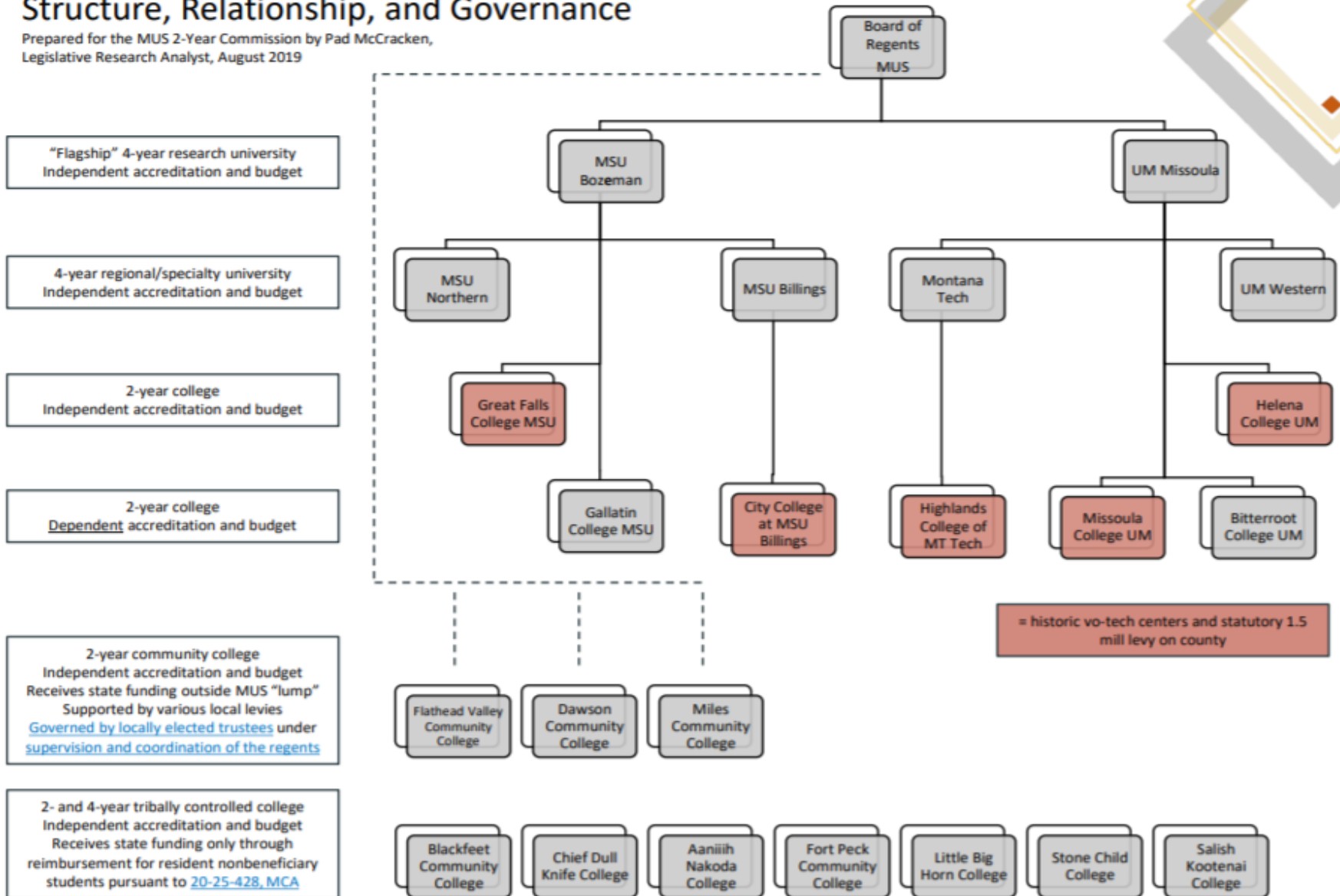
What is Career & Technical Education (CTE)?

CTE represents all occupationally-oriented education and training provided by 2-year colleges and programs.

Programs and courses are designated as CTE through a taxonomy provided by the federal government (i.e. Classification of Instructional Programs, CIP codes).

Public Postsecondary Education in Montana: Structure, Relationship, and Governance

Prepared for the MUS 2-Year Commission by Pad McCracken,
Legislative Research Analyst, August 2019



Mission

Two-year Colleges

The Two-year Colleges in the MUS will possess a comprehensive community college mission, committed to providing **transfer** education through the associates degree, **workforce development** including certificates and applied science degrees, **developmental** and adult basic education, **lifelong** learning opportunities, and **community** development. These institutions will provide **affordable, open access admissions** that will allow opportunities for all Montanan's to access higher education.

(source: MUS Comprehensive Two-year Education Mission/Vision)

Two-year Colleges will pursue efficiencies by integrating operations with Four-year and Flagship campuses whenever and wherever possible.

Great Falls College | Helena College | Gallatin College | City College
Missoula College | Bitterroot College | Highlands College

MUS 2-year Education/CTE Providers

Montana University System

Stand Alone 2-year

Independent accreditation, budget, operations, facilities, and services

Great Falls College MSU

Helena College UM

Integrated 2-year

Dependent accreditation, budget, operations, facilities, and services

Missoula College UM

Bitterroot College UM

Highlands College of MT Tech

City College at MSUB

Gallatin College MSU

UM Western, 2-year Programs

MSU Northern, 2-year Programs

MUS 2-year Colleges & Programs – CTE Concentration

	Fall 2019 - Headcount			Fall 2019 - Student FTE			2018-19 Degrees		
	Total Headcount	# CTE (enrolled in at least one CTE course)	% CTE	Student FTE	# of CTE FTE	% CTE FTE	Degrees & Certs. Awarded (undgrads)	# CTE (received CTE degree or certificate)	% CTE
MUS 2-year Colleges/Programs									
Great Falls College MSU	1,315	652	50%	817	331	41%	410	262	64%
Helena College UM	1,425	591	41%	768	333	43%	284	206	73%
Missoula College UM	1,288	917	71%	872	511	59%	437	284	65%
Bitterroot College UM	116	57	49%	59	10	17%			
Highlands College of MT Tech	707	396	56%	294	200	68%	110	102	93%
City College at MSUB	1,725	1,047	61%	621	491	79%	248	231	93%
Gallatin College MSU	804	452	56%	691	263	38%	172	100	58%
UM Western, 2-year Programs	246	217	88%	244	127	52%	298	111	37%
MSU Northern, 2-year Prgms.	483	344	71%	397	265	67%	130	130	100%
All Other 4-year Campuses	-	-	-	-	-	-	56	32	57%
Total MUS 2-year	8,109	4,673	58%	4763	2531	53%	2,145	1,458	68%
Total MUS (2-year & 4-year)	39,236	4,673	12%	34444	2531	7%	7,540	1,458	19%
Community Colleges									
Dawson CC	440	305	69%	297	116	39%	60	17	28%
Flathead Valley CC	2,428	1,479	61%	1307	549	42%	358	176	49%
Miles CC	567	357	63%	424	171	40%	134	84	63%
Total CC	3,435	2,141	62%	2028	836	41%	552	277	50%
Total MUS + CC's	42,671	6,814	16%	36472	3367	9%	8,092	1,735	21%

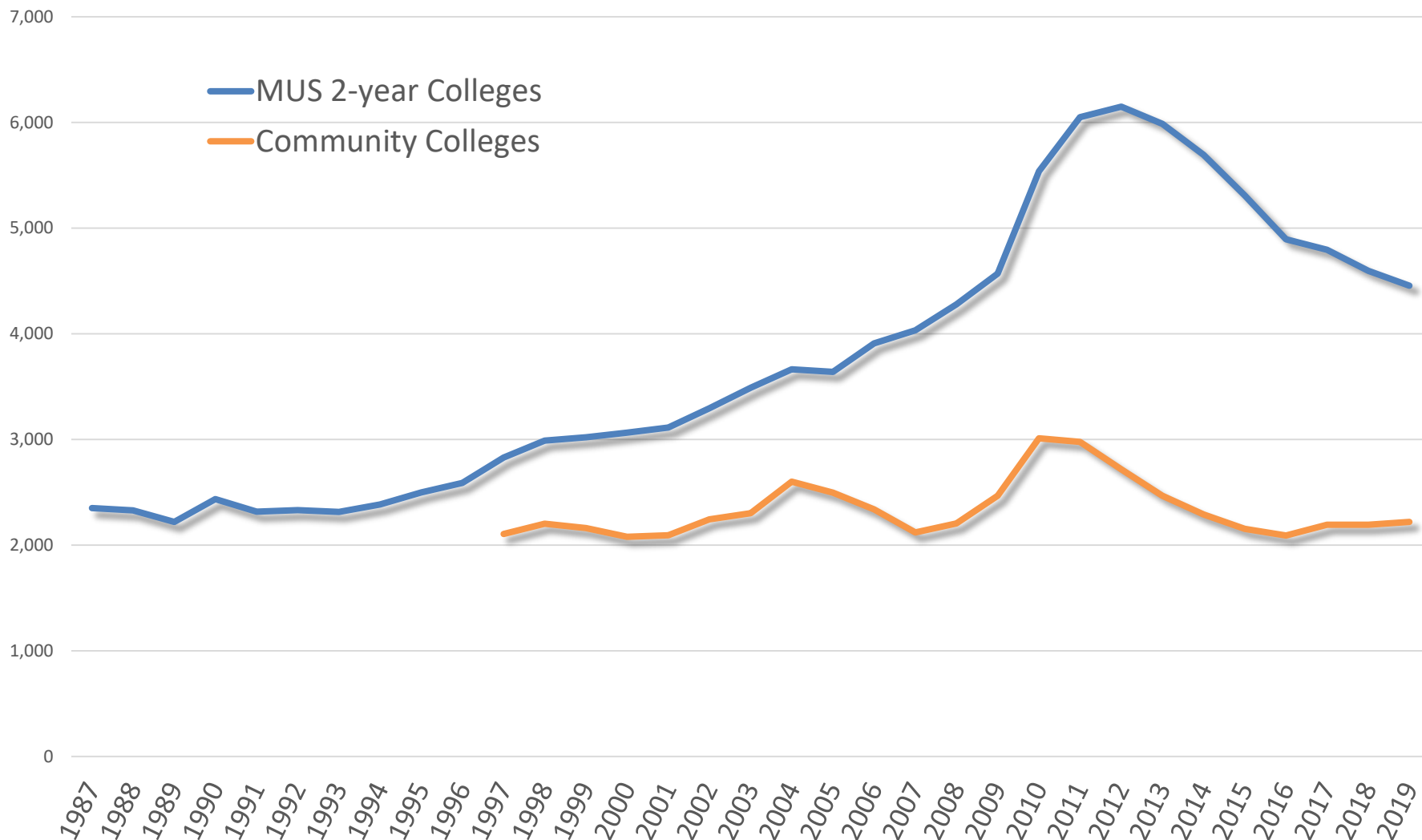
MUS 2-year Colleges & Programs – CTE Concentration Ranked

Campus	Headcount	FTE	Degrees	Composite	Rank
MSU Northern, 2-year Prgms.	71%	67%	100%	79%	1
City College at MSUB	61%	79%	93%	78%	2
Highlands College of MT Tech	56%	68%	93%	72%	3
Missoula College UM	71%	59%	65%	65%	4
UM Western, 2-year Programs	88%	52%	37%	59%	5
Miles CC	63%	40%	63%	55%	6
Helena College UM	41%	43%	73%	52%	7
Great Falls College MSU	50%	41%	64%	51%	8
Gallatin College MSU	56%	38%	58%	51%	9
Flathead Valley CC	61%	42%	49%	51%	10
Dawson CC	69%	39%	28%	46%	11
Total MUS 2-year	58%	53%	68%	60%	
Total MUS (2-year & 4-year)	12%	7%	19%	13%	
Total CC	62%	41%	50%	51%	
Total MUS + CC's	16%	9%	21%	16%	

MUS 2-year College & CC - Enrollment

Student FTE, 1987 - 2019

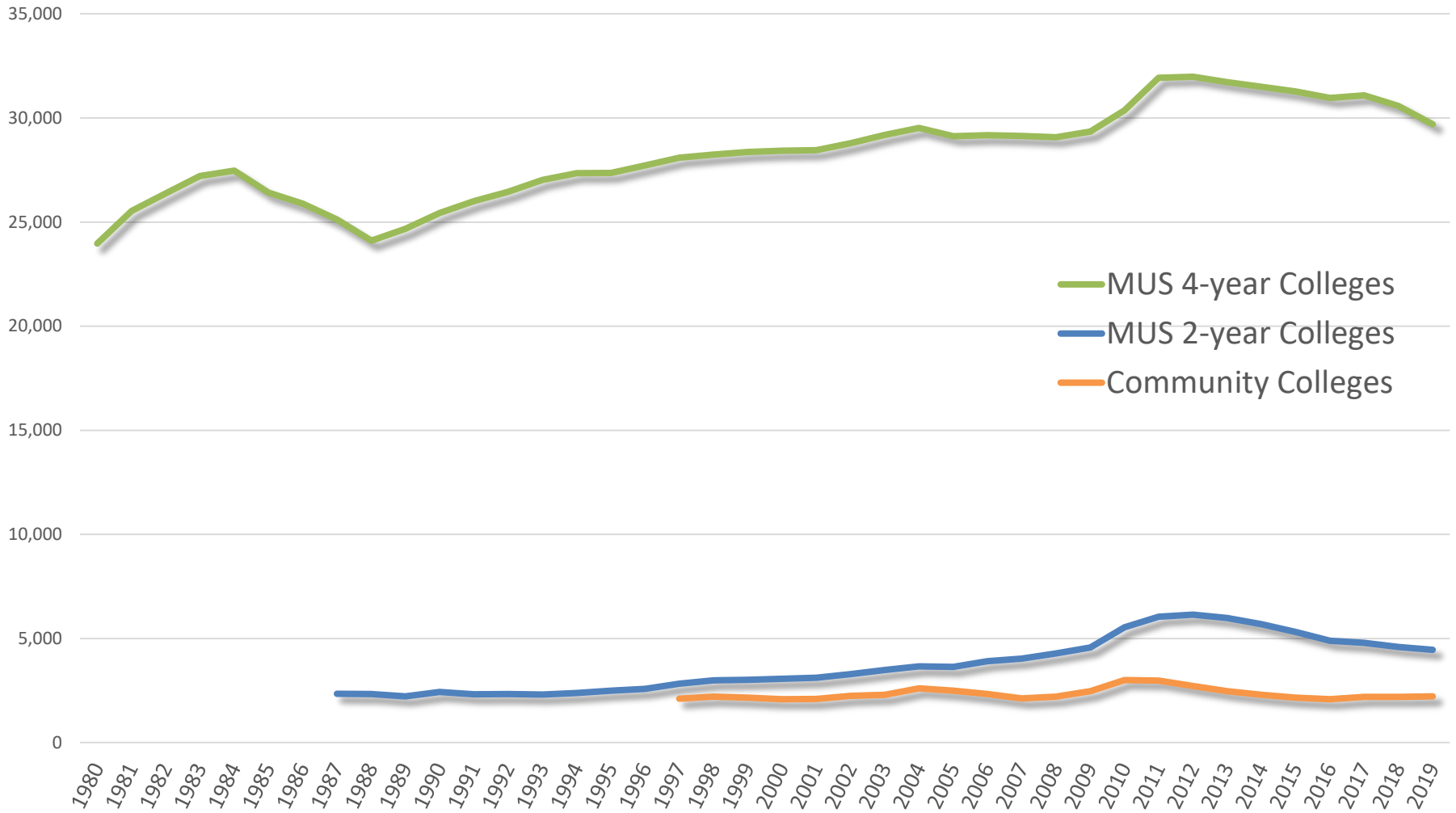
FTE = Full-time Equivalent Enrollment, 15 credit hours = 1.0 undergraduate FTE



MUS 2-year College & CC - Enrollment

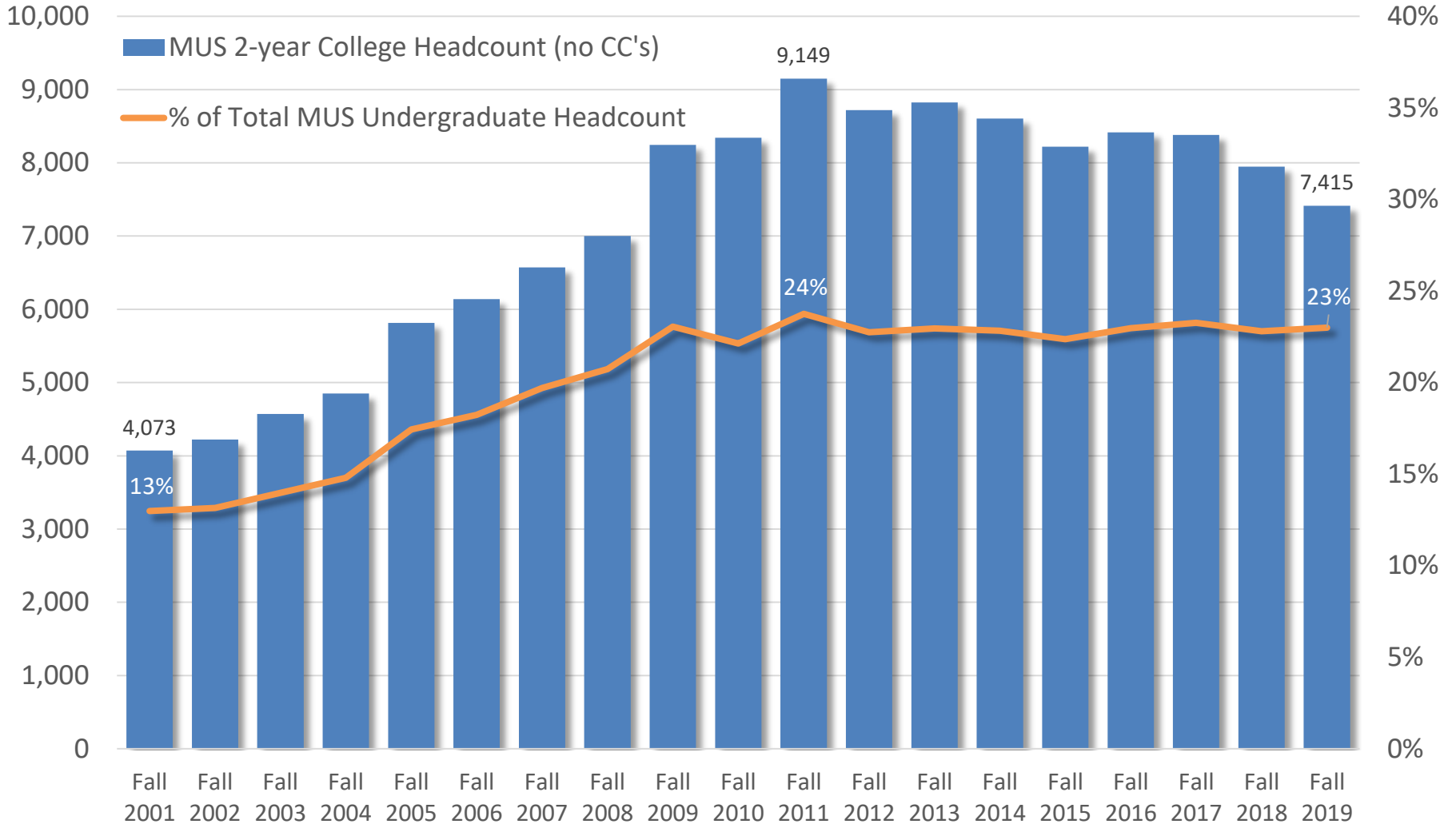
Student FTE, 1980 - 2019

FTE = Full-time Equivalent Enrollment, 15 credit hours = 1.0 undergraduate FTE, 12 credit hours = 1.0 graduate-level FTE

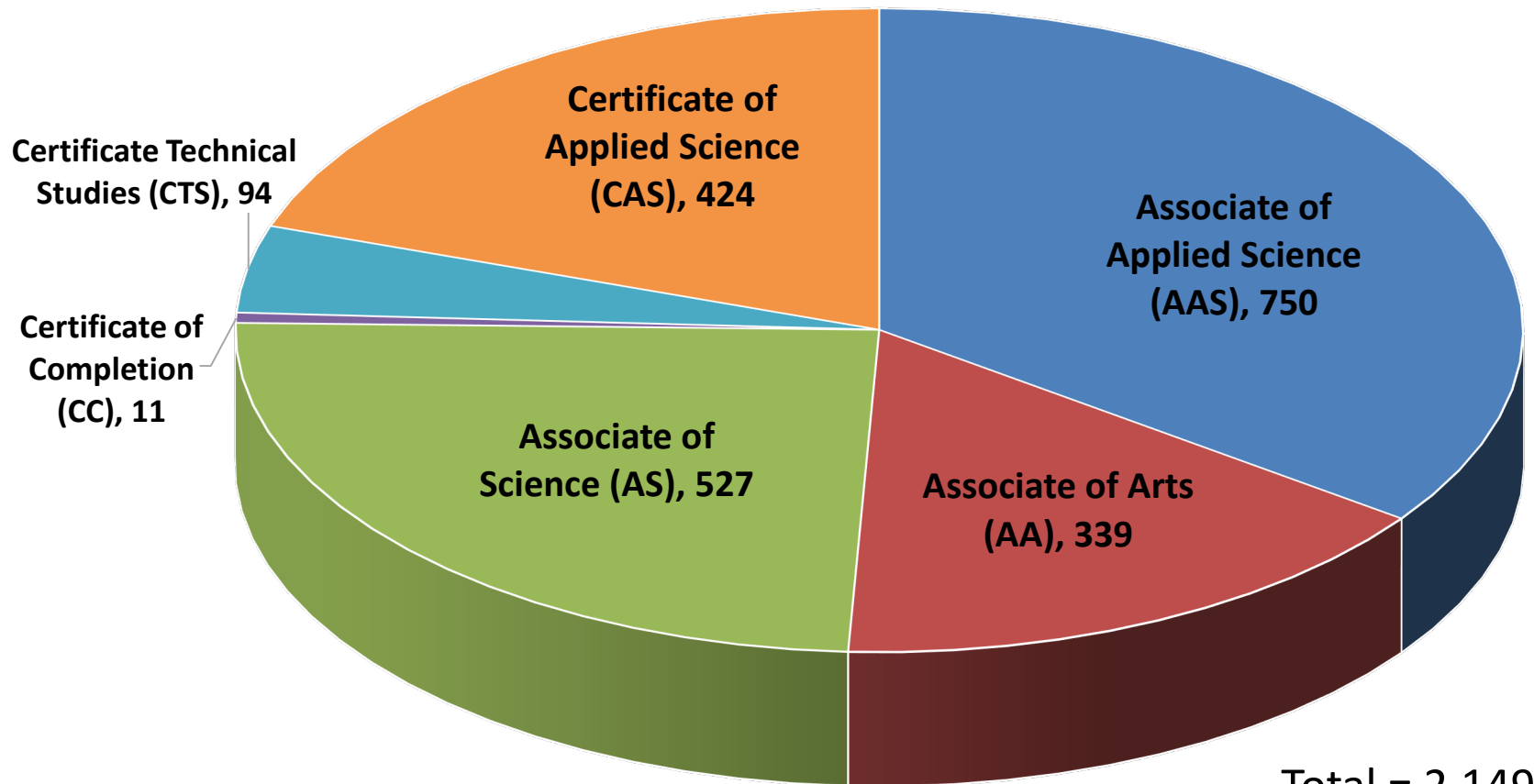


MUS 2-year Enrollment History - Headcount

Headcount = unduplicated count of individual students enrolled



MUS 2-year Degrees & Certificates Awarded, 2018-19

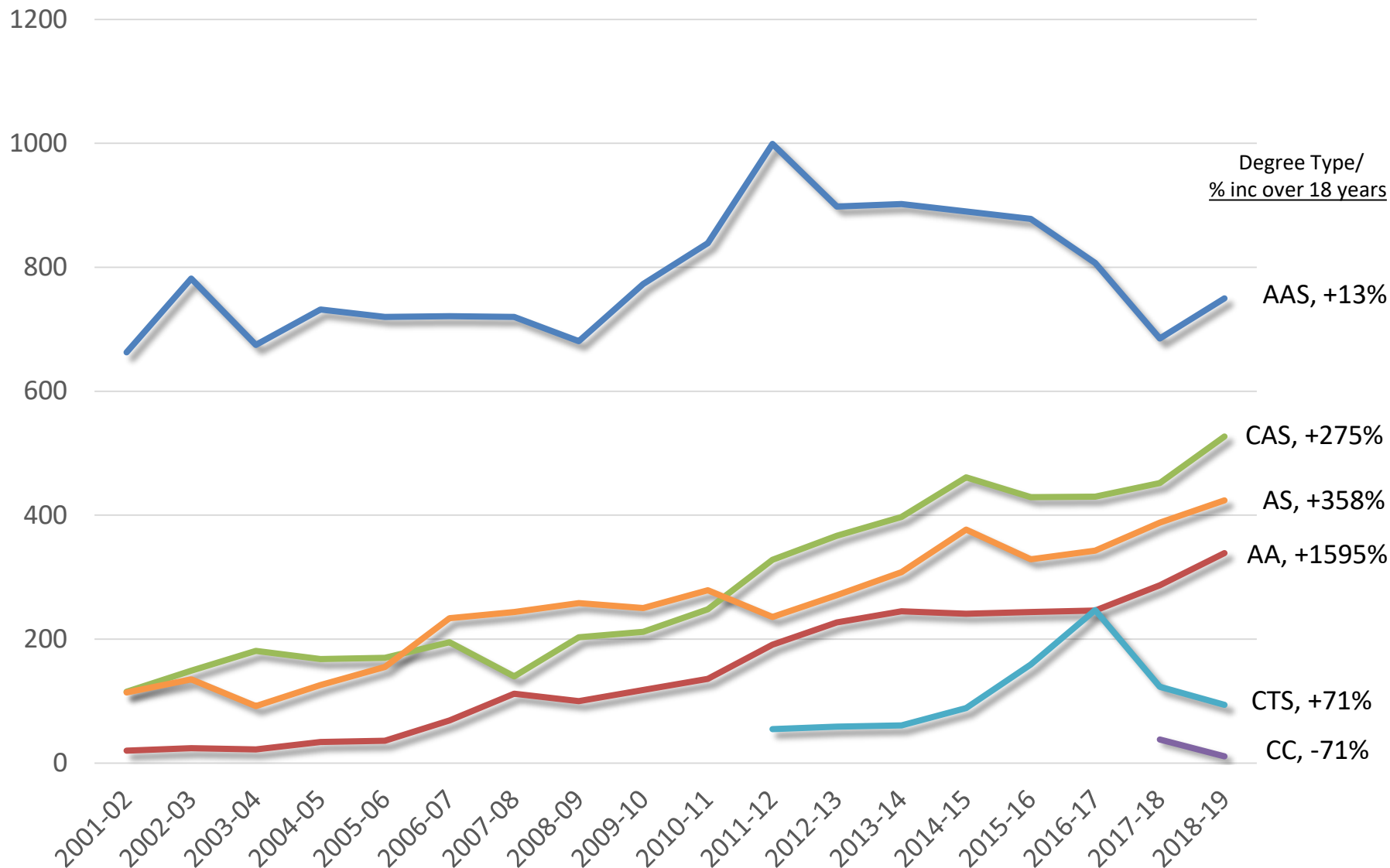


Total = 2,149
 #CTE = 1,454
 %CTE = 68%

CC's not included

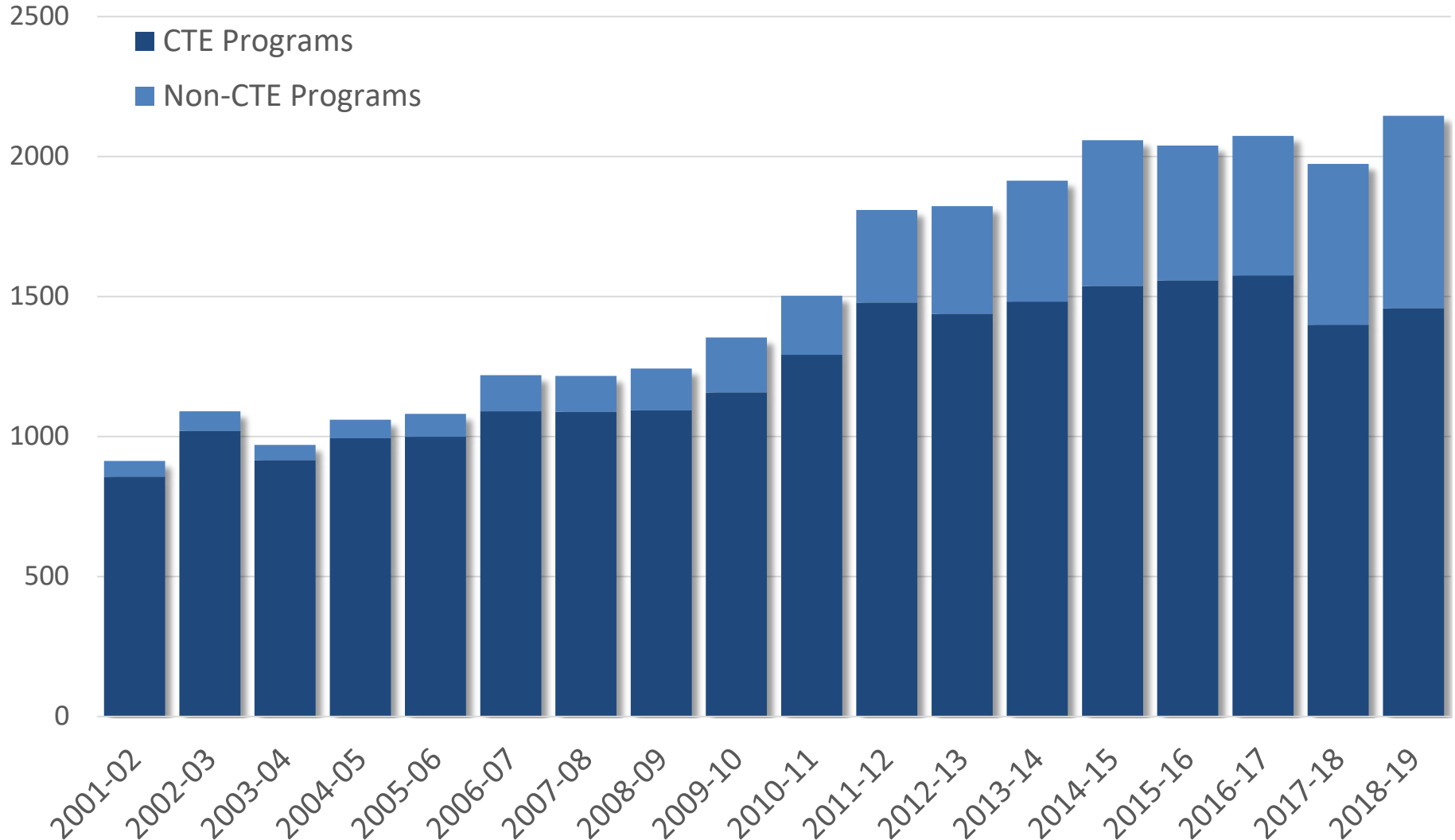
MUS 2-year Degrees & Certificates Awarded

CC's not included



MUS 2-year Degrees & Certificates Awarded by Program Type

CC's not included



MUS 2-year CTE Degrees & Certificates Awarded, 2018-19

CTE Program Categories	# of Degrees & Certs. Awarded	% of Total CTE Degrees & Certs.
Health Professions and Related Clinical Sciences	495	34%
Precision Production	221	15%
Business, Management, Marketing, and Support Services	189	13%
Mechanic and Repair Technologies/Technicians	145	10%
Education	97	7%
Computer and Information Sciences and Support Services	94	6%
Engineering Technologies/Technicians	62	4%
Construction Trades	43	3%
Agriculture, Agriculture Operation, and Related Science	34	2%
Transportation and Materials Moving	25	2%
Security and Protective Services	20	1%
Personal and Culinary Services	18	1%
Legal Professions and Studies	11	1%
Total	1454	100%

MUS 2-year CTE Degrees & Certificates Awarded by Major, 2018-19

CTE Program Category & Major	# Awarded
Agriculture & Agriculture Operation	34
Agricultural Mechanics Tech	17
Natural Horsemanship	6
Equine Studies	5
Agriculture	4
Farrier Science	2
Business, Management, Marketing	189
Accounting Technology	58
Business Administration	48
Applied Human Resources	21
Bookkeeping	21
Entrepreneurship	11
Computer Skills Specialist	7
Office Technology	7
Administrative Management	4
Customer Relations	4
Sales and Marketing	4
Hospitality Management	3
Process Plant Technology	1

CTE Program Category & Major	# Awarded
Computer and Information Sciences	94
Computer Technology	30
Information Technology	16
Network Support	14
Comp Prog & App Development	11
Cybersecurity	10
Microcomputer Support	8
Networking Technician	3
Web Development & Admin	2
Construction Trades	43
Sustainable Construction Tech	17
Carpentry	8
Construction Management	6
Construction Helper	4
Facility Management	4
Plumbing	4
Education	97
Education Studies	53
Early Childhood Education	44

MUS CTE Degrees & Certificates Awarded by Major, 2018-19 (continued)

CTE Program Category & Major	# Awarded
Engineering Technologies/Technicians	62
Electrical Technology	17
Process Plant Technology	12
Industrial Technician	8
Design Drafting Technology	6
Photonics and Laser Technology	6
Civil Engr Technology	4
Computer Aided Design	4
Energy Technology	3
Sustainable Energy Technician	2
Health Professions and Related Clinical Sciences	495
Nursing	180
Health Information Technology	49
Practical Nursing	42
Radiologic Technology	38
Medical Assistant	34
Surgical Technology	30
Paramedic	22
Medical Information Technology	21
Dental Hygiene	16
Physical Therapist Assistant	16
Respiratory Care	16
Computed Tomography	9
Dental Assistant	9
Pre-Pharmacy	5
Nurse Assistant	3
Behavioral Health Tech	2
Phlebotomy	2
Pharmacy Technician	1

CTE Program Category & Major	# Awarded
Legal Professions and Studies	11
Office Technology	10
Information Technology	1
Mechanic and Repair Technologies/Technicians	145
Diesel Technology	77
PreApprenticeship Line Program	38
Automotive Technology	19
Aviation Maintenance Tech	8
Auto Collision Rpr/Rfin	2
HVAC Technician	1
Personal and Culinary Services	18
Culinary Arts	12
Food Service Management	6
Precision Production	221
Welding	162
Machining Technology	31
CNC Machining/Manufacturing	21
Metals Technology	7
Security and Protective Services	20
Fire and Rescue	13
Fire Science	5
Criminal Justice	2
Transportation and Materials Moving	25
Aviation	18
Heavy Equipment Operations	7

MUS 2-year CTE Degrees & Certificates Awarded

CTE Program Categories	Academic Years																	% Change AY02-AY19	
	AY02	AY03	AY04	AY05	AY06	AY07	AY08	AY09	AY10	AY11	AY12	AY13	AY14	AY15	AY16	AY17	AY18		AY19
Agriculture, Agriculture Operations	17	27	21	18	17	11	16	10	11	13	12	12	18	24	31	53	30	34	100%
Business, Management, Marketing	194	180	144	188	163	180	144	150	161	170	200	202	189	214	222	176	174	189	-3%
Computer and Information Sciences	114	134	89	74	65	50	80	50	59	94	122	160	126	115	115	99	93	94	-18%
Construction Trades	6	16	8	12	16	15	36	46	37	67	62	40	32	19	27	19	44	43	617%
Education	6	58	27	59	36	32	35	29	18	17	31	13	26	35	43	63	74	97	1517%
Engineering Technologies/Technicians	51	57	71	52	72	68	71	76	77	101	165	115	105	96	99	93	81	62	22%
Health Professions and Related Clinical Sciences	271	308	359	369	431	496	459	471	500	516	598	610	656	630	560	558	482	495	83%
Legal Professions and Studies	10	11	10	9	12	9	8	17	13	10	13	9	13	15	19	10	6	11	10%
Mechanic and Repair Technologies/Technicians	109	108	102	99	110	113	124	110	127	148	125	120	122	105	151	126	162	145	33%
Personal and Culinary Services	8	8	11	11	13	22	12	19	16	15	22	19	31	25	18	17	7	18	125%
Precision Production	52	78	48	61	35	38	52	62	92	99	90	85	112	195	238	323	197	221	325%
Security and Protective Services	9	21	16	29	20	34	25	30	22	21	16	22	24	27	11	19	14	20	122%
Transportation and Materials Moving	9	14	8	12	6	18	20	18	16	17	17	25	24	31	18	17	27	25	178%
Total	856	1020	914	993	996	1086	1082	1088	1149	1288	1473	1432	1478	1531	1552	1573	1391	1454	70%

Top 10 MUS CTE Degrees & Certificates Awarded, 2018-19

CTE Programs		Total CTE degrees/certificates awarded = 1,454	
Major	# CTE	% CTE	
Nursing - Registered Nurses (RN)	180	12%	
Welding	162	11%	
Diesel Technology	77	5%	
Accounting Technology	58	4%	
Education Studies	53	4%	
Health Information Technology	49	3%	
Business Administration	48	3%	
Early Childhood Education	44	3%	
Practical Nursing (LPN)	42	3%	
PreApprenticeship Line Program	38	3%	
TOTAL # of Degrees/Certs. Awarded	751	52%	

Top 10 MUS CTE Degrees & Certificates Awarded by Campus, 2018-19

City College		Total CTE degrees = 231	
Major	# CTE	% CTE	
Nursing	37	16%	
Welding & Fabrication	24	10%	
Applied Human Resources	20	9%	
Business Administration	15	6%	
Diesel Technology	15	6%	
Practical Nursing	15	6%	
Radiologic Technology	14	6%	
Health Information Technology	13	6%	
Process Plant Technology	12	5%	
Paramedic	11	5%	
# of Degrees/Certs. Awarded	176	76%	

Great Falls College		Total CTE degrees = 262	
Major	# CTE	% CTE	
Welding & Fabrication	72	32%	
Nursing	32	14%	
Health Information Technology	28	12%	
Practical Nursing	20	9%	
Dental Hygiene	16	7%	
Physical Therapist Assistant	16	7%	
Accounting Technology	11	5%	
Paramedic	11	5%	
Surgical Technology	10	4%	
Dental Assistant	9	4%	
# of Degrees/Certs. Awarded	225	100%	

Highlands College		Total CTE degrees = 102	
Major	# CTE	% CTE	
PreApprenticeship Line Program	38	37%	
Machining Technology	15	15%	
Radiologic Technology	11	11%	
Accounting Technology	7	7%	
Medical Assistant	6	6%	
Carpentry	4	4%	
Welding	4	4%	
Civil Engr Technology	3	3%	
Nurse Assistant	3	3%	
Automotive Technology	2	2%	
# of Degrees/Certs. Awarded	93	91%	

Helena College		Total CTE degrees = 206	
Major	# CTE	% CTE	
Nursing	31	15%	
Accounting Technology	22	11%	
Bookkeeping	14	7%	
Computer Technology	14	7%	
Diesel Technology	14	7%	
Fire and Rescue	13	6%	
Welding & Fabrication	13	6%	
Entrepreneurship	11	5%	
Medical Assistant	9	4%	
Aviation Maintenance Tech	8	4%	
# of Degrees/Certs. Awarded	149	72%	

Top 10 MUS CTE Degrees & Certificates Awarded by Campus, 2018-19

Gallatin College		
		Total CTE degrees = 110
Major	# CTE	% CTE
Aviation	17	15%
Business Administration	15	14%
Welding	15	14%
CNC Machining/Manufacturing	14	13%
Medical Assistant	14	13%
Bookkeeping	7	6%
Health Information Technology	7	6%
Photonics and Laser Technology	6	5%
Microcomputer Support	5	5%
Culinary Arts	4	4%
# of Degrees/Certs. Awarded	104	95%

Missoula College		
		Total CTE degrees = 284
Major	# CTE	% CTE
Nursing	36	13%
Medical Information Technology	20	7%
Surgical Technology	20	7%
Sustainable Construction Tech	17	6%
Diesel Technology	16	6%
Information Technology	16	6%
Welding	15	5%
Radiologic Technology	13	5%
Accounting Technology	11	4%
Cybersecurity	10	4%
# of Degrees/Certs. Awarded	174	61%

MSU Northern		
		Total CTE degrees = 126
Major	# CTE	% CTE
Diesel Technology	32	25%
Nursing	30	24%
Agricultural Mechanics Tech	17	13%
Electrical Technology	16	13%
Welding	12	10%
Automotive Technology	8	6%
Agriculture	4	3%
Plumbing	4	3%
Business Administration	2	2%
Civil Engr Technology	1	1%
# of Degrees/Certs. Awarded	126	100%

UM Western		
		Total CTE degrees = 111
Major	# CTE	% CTE
Education Studies	53	48%
Early Childhood Education	42	38%
Natural Horsemanship	6	5%
Equine Studies	5	5%
Business Administration	3	3%
Farrier Science	2	2%
# of Degrees/Certs. Awarded	111	100%

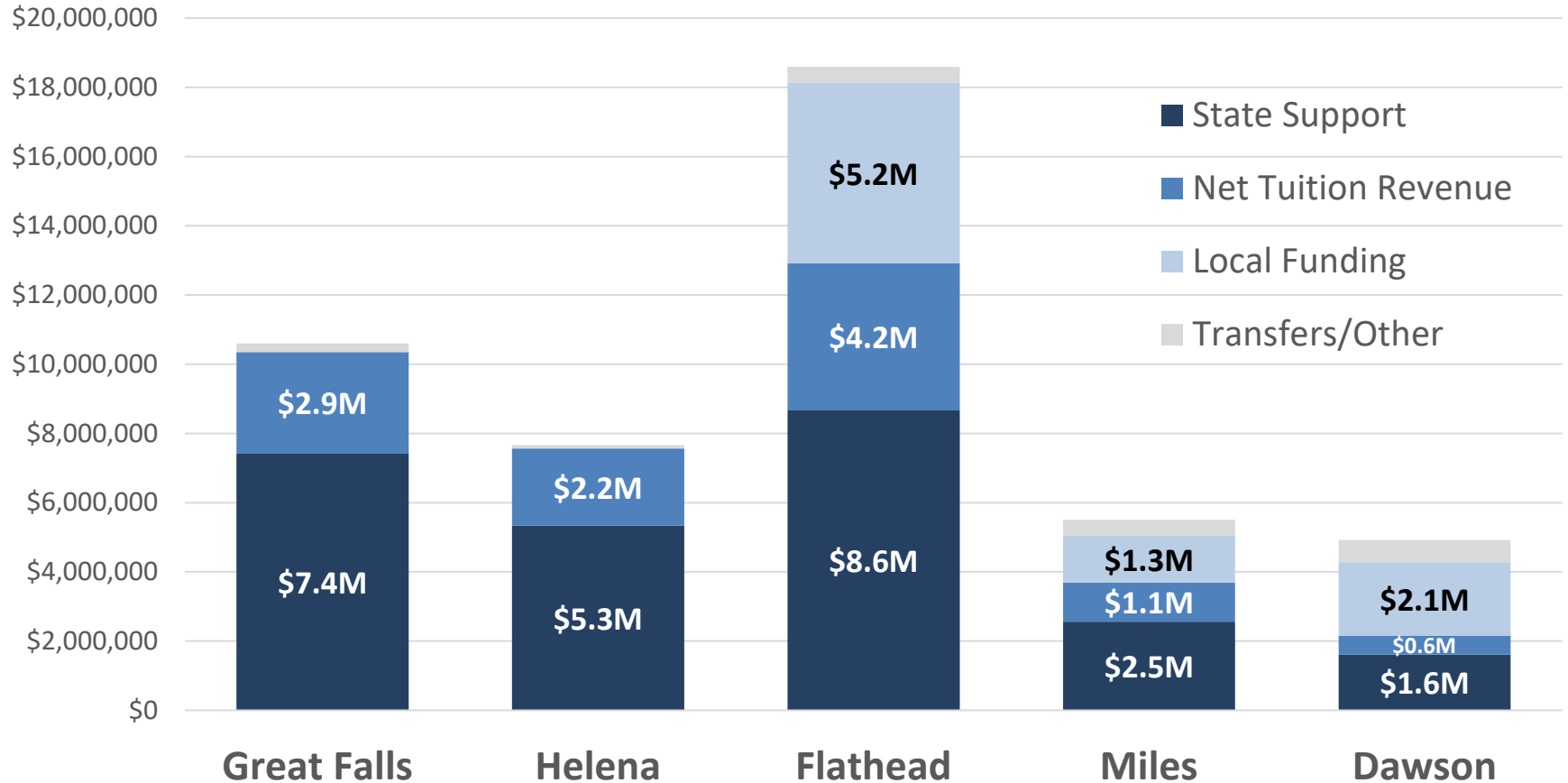


MCP Montana Career Pathways



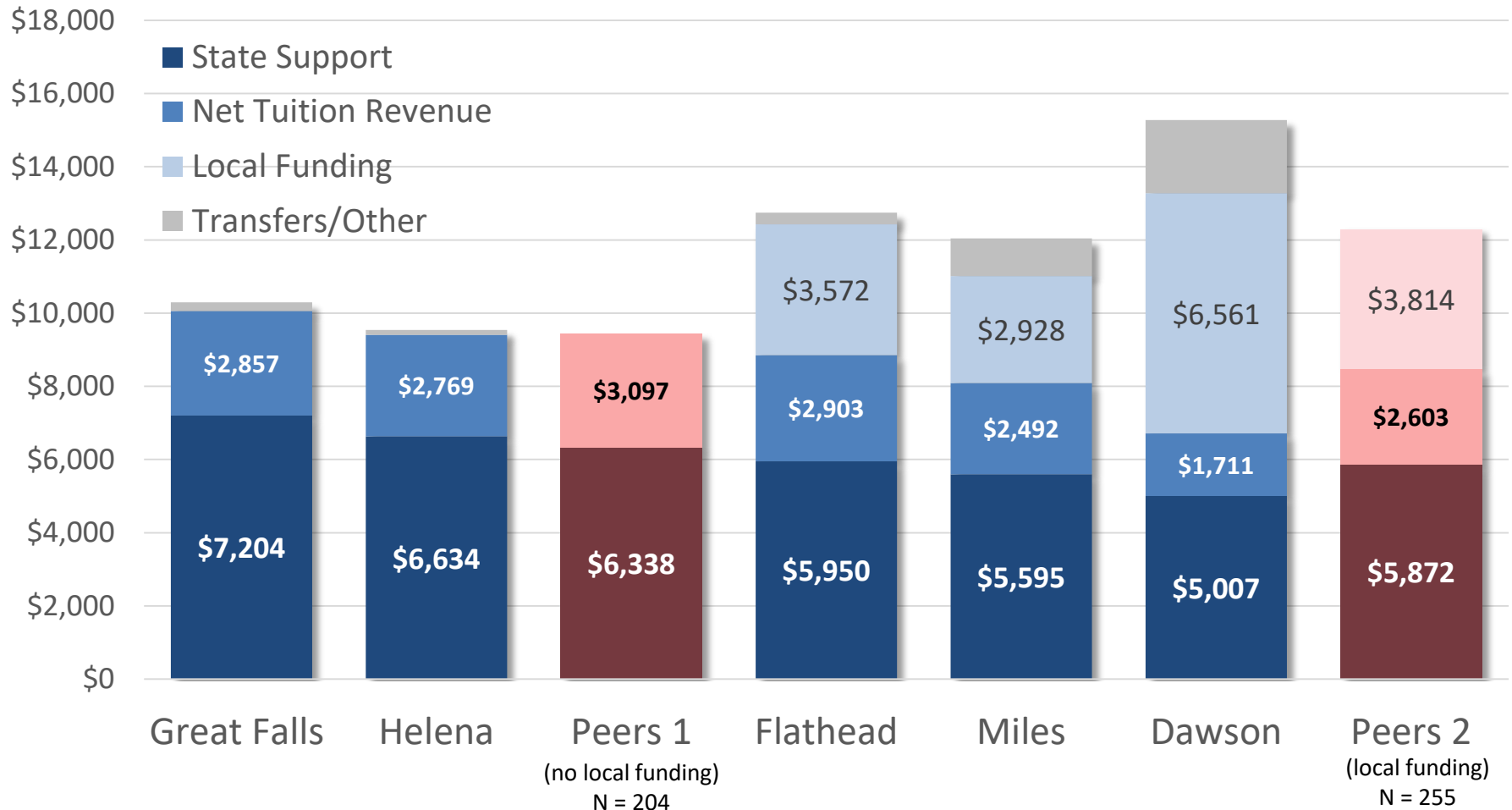
Current Unrestricted Revenue -- Operating Budget, FY19

Current Unrestricted = Revenue from Tuition, State Approps., & Local Funding to Support Educational and General Operations



Current Unrestricted Revenue per Student FTE, 2018-19

Current Unrestricted = Revenue from Tuition, State Approps., & Local Funding to Support Educational and General Operations

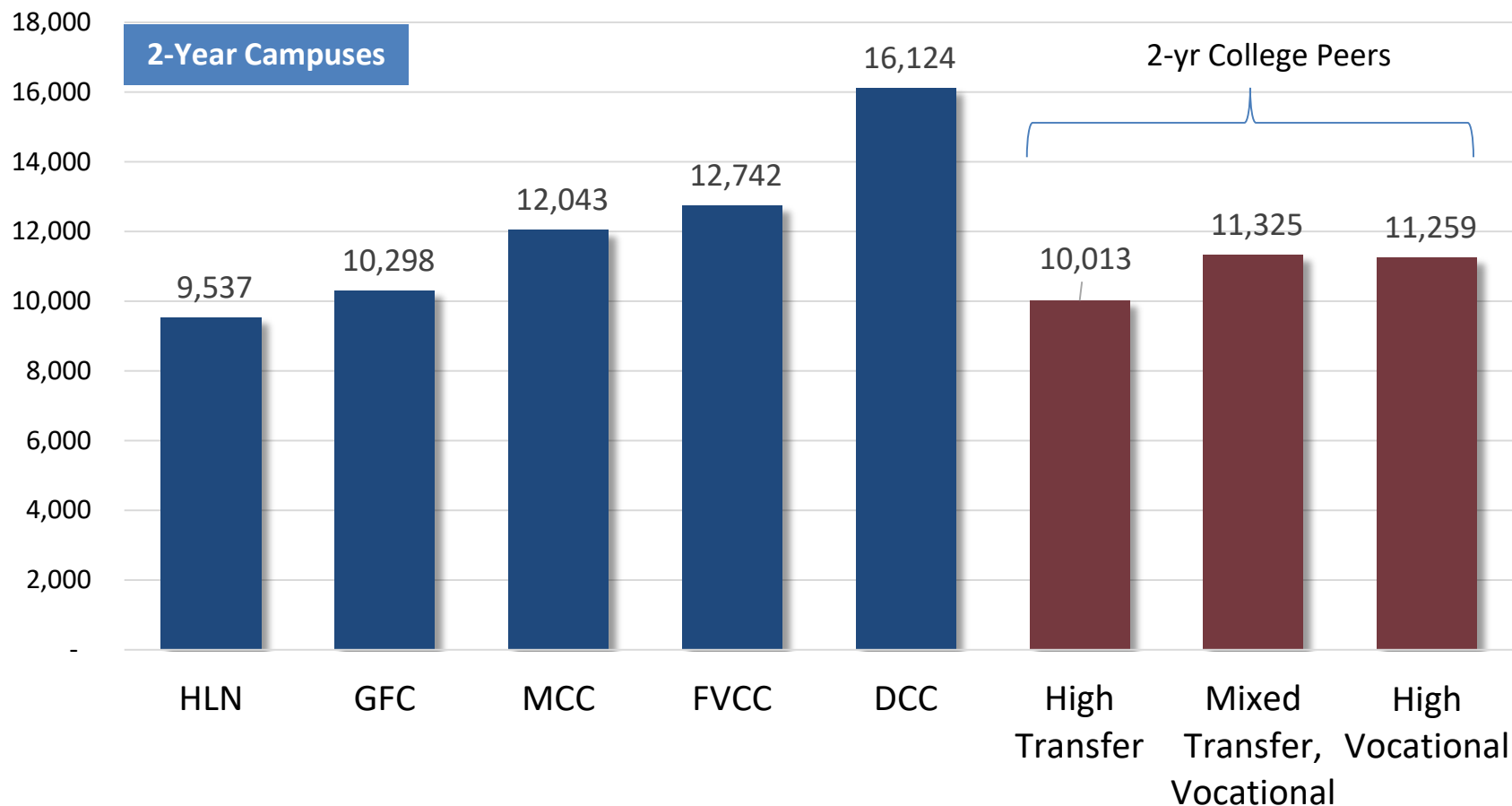


Peer 1 = public 2-year colleges without local funding, <2500 students, all states, 2016-17, (aggregate values represented above)

Peer 2 = public 2-year colleges with local funding, <2500 students, all states, 2016-17, (aggregate values represented above)

Current Unrestricted Revenue per Student FTE, 2018-19

Current Unrestricted = Revenue from Tuition, State Approps., & Local Funding to Support Educational and General Operations



Peers: public 2-year colleges, <2500 students, all states, 2016-17

Carnegie Categories: (aggregate values represented above)

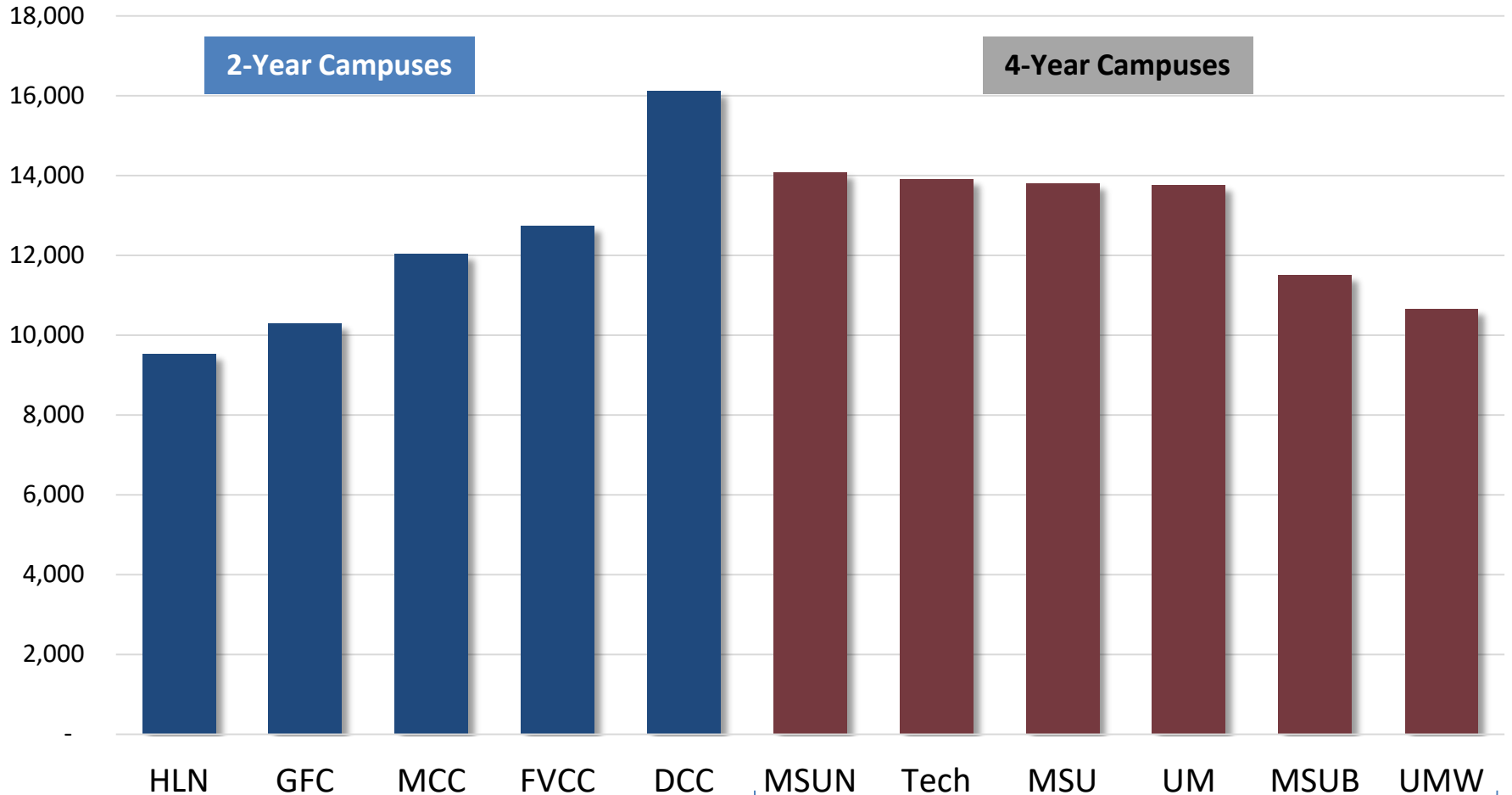
High Transfer: fewer than 30% of awards (degrees and certificates) in career & technical programs; N = 107; DCC

Mixed Transfer, Vocational: 30-50% of awards (degrees and certificates) in career & technical programs; N = 165; FVCC

High Vocational: more than 50% of awards (degrees and certificates) in career & technical programs; N = 127; HLN, GFC, MCC

Current Unrestricted Revenue per Student FTE, FY19

Current Unrestricted = Revenue from Tuition, State Approps., & Local Funding to Support Educational and General Operations



4-year campuses: Includes all integrated 2-year colleges, as well as undergraduate and graduate functions

2-year Education – System Initiatives

15 Year History

- 2005** – BOR establishes Workforce & 2-year Education Committee
- 2007** – \$5M OTO for equipment at 2-year colleges and programs
- 2007** – \$1.5M OTO to improve transferability, Common Course Numbering
- 2007** – LRBP, \$4.5M Helena College expansion; \$3M Great Falls College expansion; \$2.2M City College expansion
- 2007 - 2017** - 10 consecutive years of Tuition Freeze at MUS 2-year Colleges
- 2008** – OCHE hires Deputy Commissioner for 2-year Education
- 2009** – Lumina Grant (grew into College!NOW)
- 2009** – \$2M OTO to implement Banner at MCC & DCC
- 2009** – Bitterroot College Programs established
- 2010** – Gallatin College established
- 2013** – \$1M OTO for Workforce Development, CC's
- 2013** – \$1M OTO for Dual Enrollment
- 2013** – Renaming & Rebranding of the Colleges of Technology
- 2013** – LRBP, \$35M for 2-year/CTE facilities (Missoula College, MSUN Auto/Diesel Tech, GFC roof)
- 2013** – \$25M federal grant focused on career pathway development

2-year Education – System Initiatives

15 Year History

Continued

2014 – Full 2-year college mission implemented at all MUS 2-year colleges

2015 – \$15M federal grant for Healthcare with a focus on revising nursing curriculum

2015 – Performance Funding adopted for all MUS campuses include integrated 2-year colleges

2017 – Developmental Education Reform (Co-requisites)

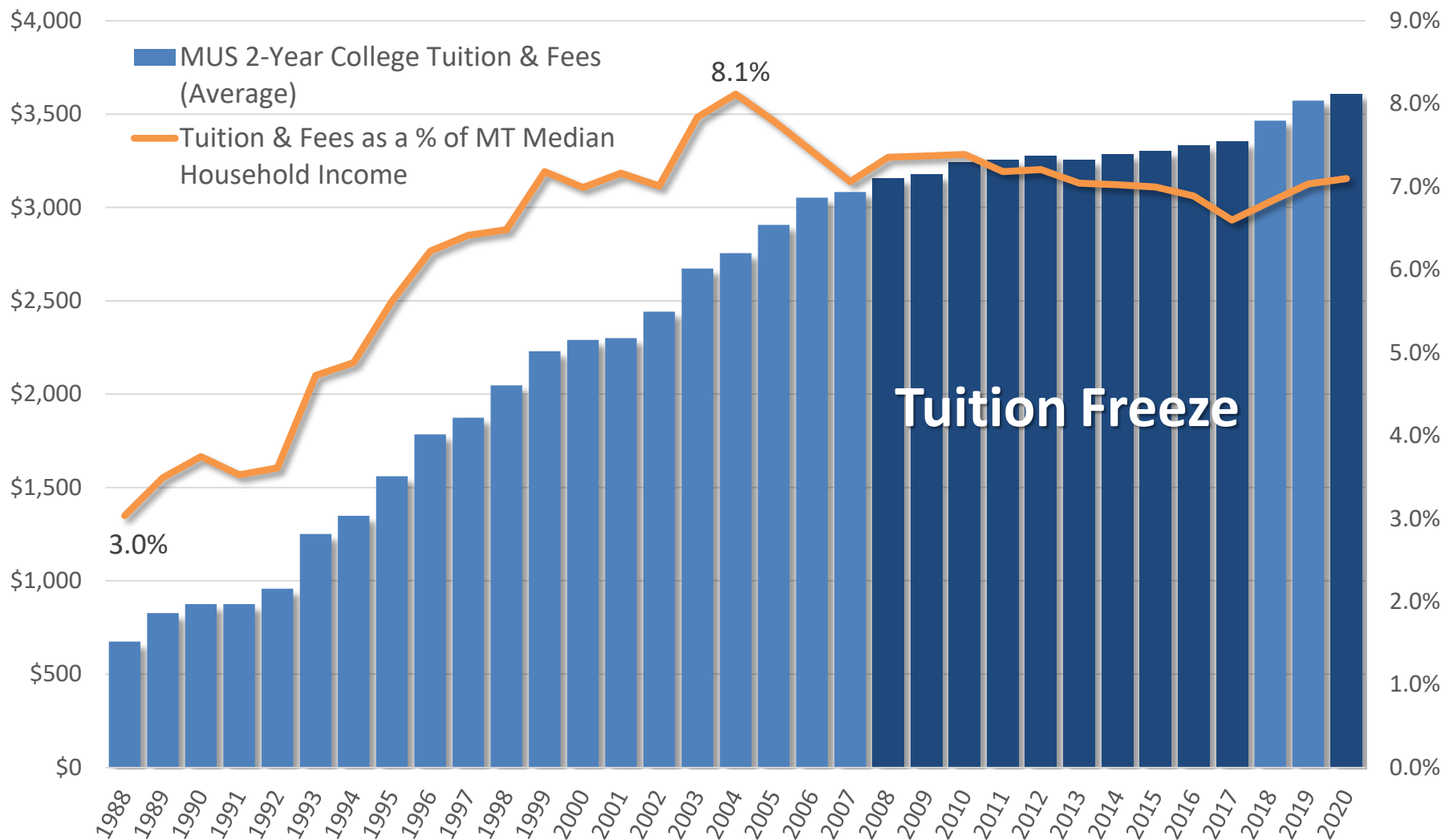
2018 – Dual credit, 1-2-Free

2019 – LRBP, \$4.25M Dental Clinic Lab, Great Falls College MSU

2019 – College & Career Access Portal

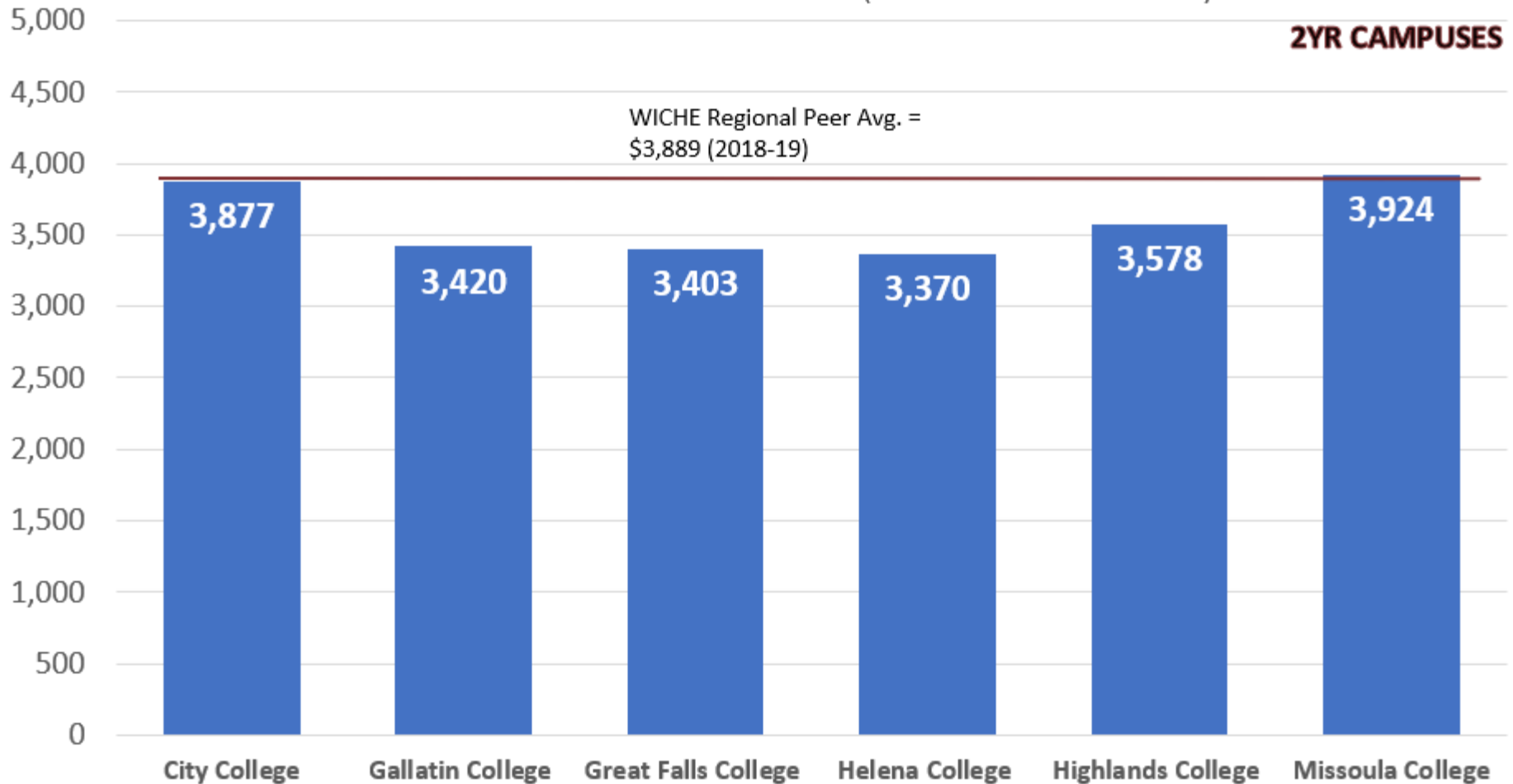
MUS 2-year Tuition & Fees History

Average rates compared to Ratio of Tuition/Fees to MT Median Household Income



Tuition & Fees - Resident Undergraduate, FY 2020

Academic Year Rates for Full-time Students (12+ credits each semester)

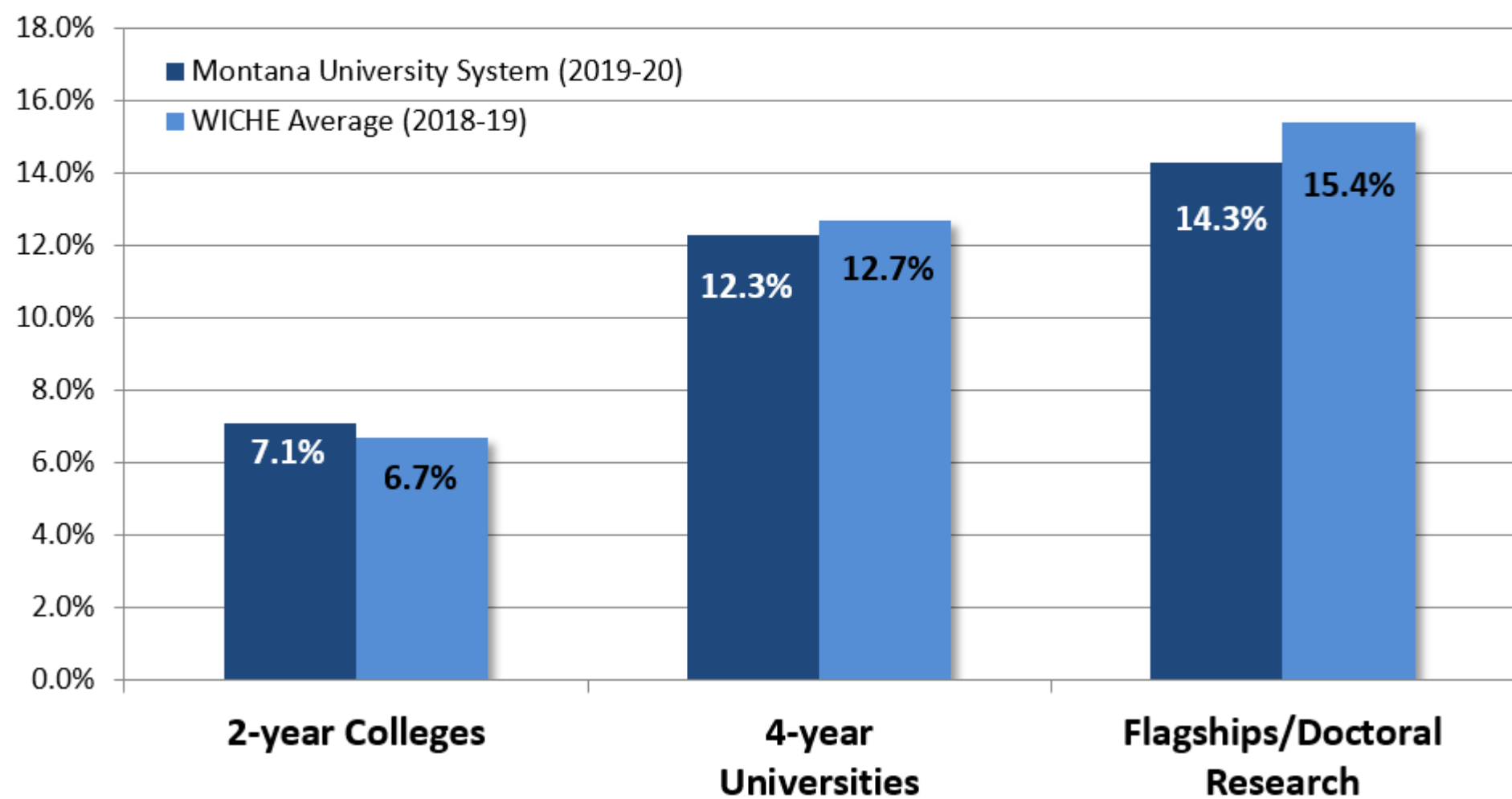


Regional Tuition & Fees Comparison

Ratio of Tuition & Fees to Median Household Income

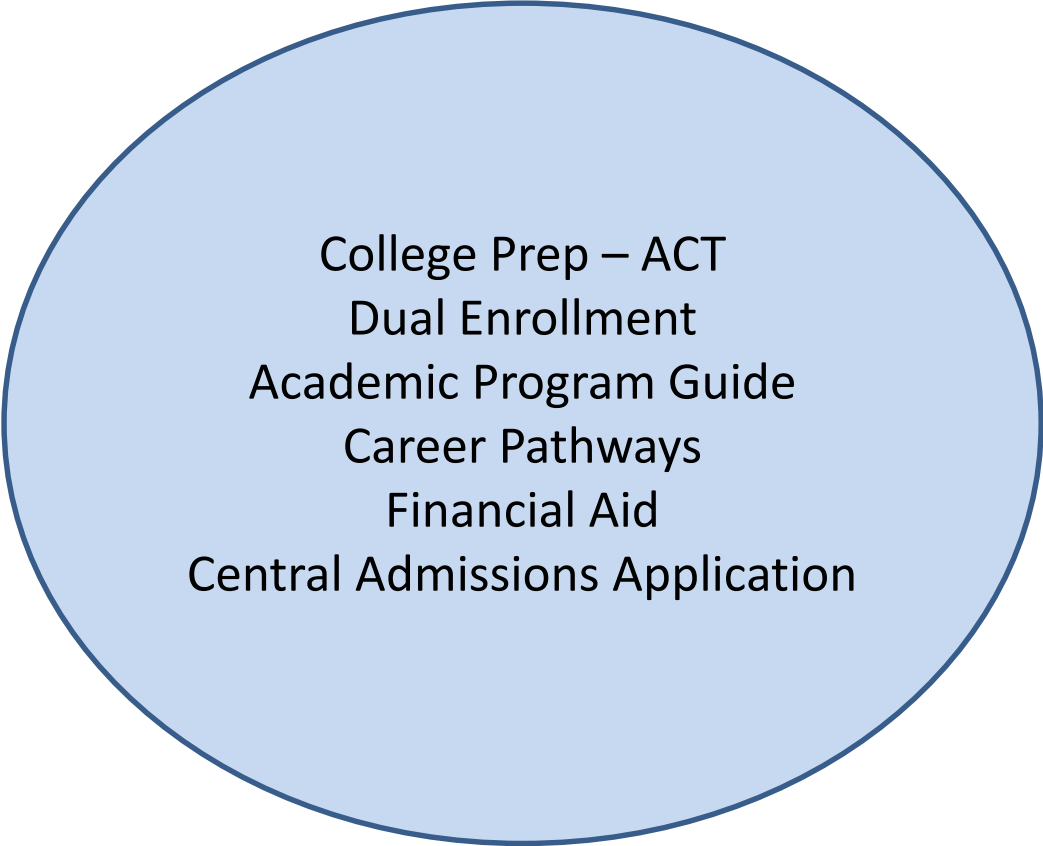
(based on Academic Year Rates for Resident Undergraduate Full-time Students)

MT Median Household Income
 2009 = \$43,089
 2017 = \$50,801



College & Career Access Portal

COMING SOON!!!!



College Prep – ACT
Dual Enrollment
Academic Program Guide
Career Pathways
Financial Aid
Central Admissions Application

Nursing Degree & Certificate Production

Includes CC's

Licensed Practical Nurse

Degree	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Certificate	20	3	1	6	27	88	63	23	22	9							43	53
Associates	107	119	115	129	115	75	75	93	108	130	163	127	157	147	143	90	2	
LPN Total	127	122	116	135	142	163	138	116	130	139	163	127	157	147	143	90	45	53

Registered Nurse

Degree	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Associates	70	75	131	94	92	121	83	112	112	143	208	237	229	212	206	219	187	210
Bachelors	116	126	168	185	192	187	195	205	205	191	195	229	260	264	264	265	262	302
RN Total	186	201	299	279	284	308	278	317	317	334	403	466	489	476	470	484	449	512

Graduate-Level Degrees

Degree	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Masters	8	8	6	11	3	7	11	13	15	20	27	26	31	9	10	3	1	5
Doctoral															7	17	17	20
Graduate-Level Total	8	8	6	11	3	7	11	13	15	20	27	26	31	9	17	20	18	25

Grand Total	321	331	421	425	429	478	427	446	462	493	593	619	677	632	630	594	512	590
--------------------	------------	------------	------------	------------	------------	------------	------------	------------	------------	------------	------------	------------	------------	------------	------------	------------	------------	------------

Nursing Degree & Certificate Production, 2018-19

CAMPUS	CNA	LPN	RN		Masters	Doctorate
	Certificate	Certificate	Associates	Bachelors		
Miles CC			16			
Flathead Valley CC		11	28			
City College		15	37			
Great Falls College		20	32			
MSU - Billings				18		
MSU - Northern			30	14		
MSU - Bozeman				225	5	20
Helena College		7	31			
Montana Tech				45		
Highlands College	5					
Missoula College			36			
Grand Total	5	53	210	302	5	20

Nursing Labor Market Demand Data

Montana Employment Projections 2018-2028

Figure 20: Top 20 Healthcare Jobs with the Most Annual Openings, 2018-2028

	Occupation	Minimum Requirements		Annual Openings			2018 MT Annual Average Wage	
		Edu,	Work Exp.	New Jobs	Exits	Transfers		Total Openings
1	Nursing Assistants	PS ND		70	426	354	850	\$29,110
2	Registered Nurses	Bach		164	332	252	749	\$67,450
3	Home Health Aides	HSE	ST OJT	40	103	86	228	\$25,940
4	Licensed Practical and Licensed Vocational Nurses	PS ND		20	96	95	211	\$43,770

Source: MT DOLI