



HB 14-1319
PROPOSED MODEL DESIGN

ELEMENTS FOR SETTING THE INITIAL
FUNDING ALLOCATION

OCTOBER 16, 2014

STATE OPERATING FUNDS FOR PUBLIC INSTITUTIONS OF HIGHER EDUCATION

Total available funds are first determined by taking the current year's appropriation for Higher Education and multiplying it by a **percentage increase/decrease**. This percentage is a **policy variable** set annually through the state budget process.



STATE OPERATING FUNDS FOR PUBLIC INSTITUTIONS OF HIGHER EDUCATION

The model must then allocate money from the total amount of available funds into several “**components**” to determine how much money is to be distributed into each component.



FUNDING ALLOCATIONS

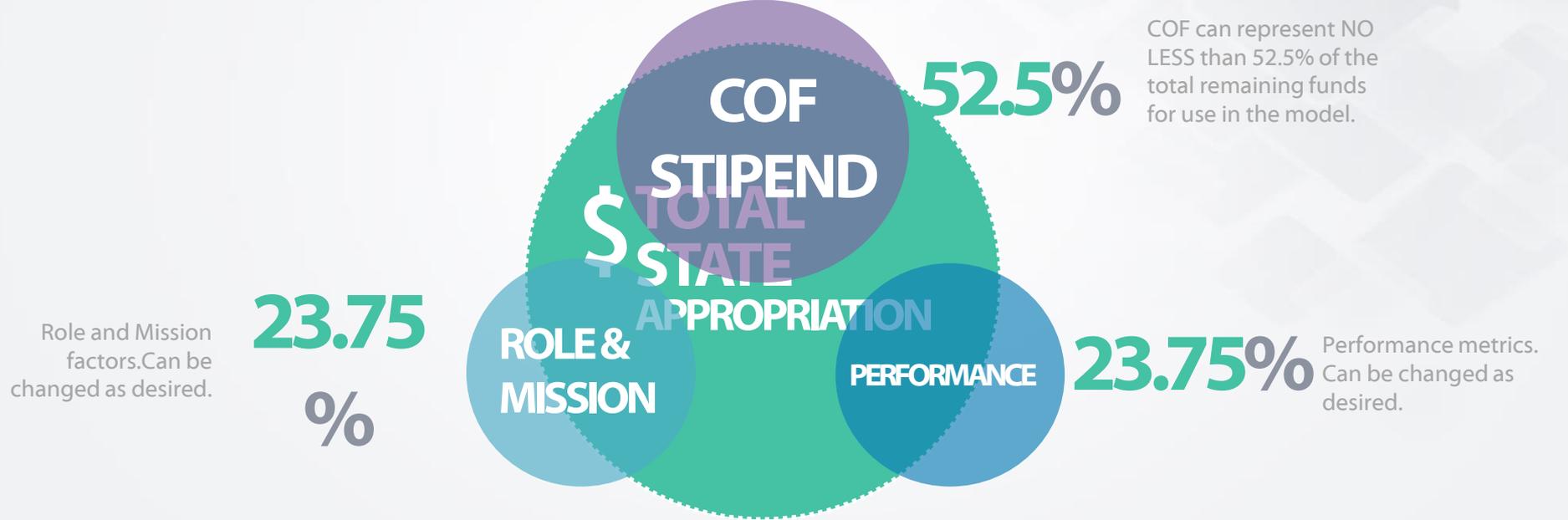
From the total available funds - **Specialty Ed and Direct Grant Programs** - are carved out first to ensure they are not included in the model's calculations. This allocation is variable: it increases or decreases by a percentage equal to the percentage change in total state appropriation.



SPECIALTY ED
and
DIRECT GRANT
PROGRAMS

FUNDING ALLOCATIONS

The funds allocated in the model are then distributed to **three components: COF Stipend, Role and Mission, and Performance**. These are the only components from which institutions will draw in the model.





NEXT
COF STIPEND

Number of credits at \$X price per credit

COF STIPEND

Applies to Colorado Resident Undergraduate Students only.



**COF
STIPEND**

For budget planning purposes of the model, COF stipend is calculated as the number of credits at X dollars per credit.

This is a negotiated rate direct billed to the DHE, based on and adjusted for actual enrollment.



NEXT
ROLE AND MISSION

Pell, Mission Differentiation, Point System

ROLE AND MISSION

All factors are **assessed** for **each institution**. Metrics are **weighted** by **groups of generally similar institutions** with generally similar role and mission. Funds are **allocated** to **governing boards**.

**Pell /
Underserved**

Resident Only

**Urban /
Rural**

More Rural

**Low
Enrollment**

Least Enrollment

**UG
High Cost**

Highest Cost

Research

Highest Research

Selectivity

More Open Access

**Graduate
High Cost**

Highest Cost

Remediation

Most Remediation

**Number
of
Campuses**

Count-based

**Optional
Metric(s)**

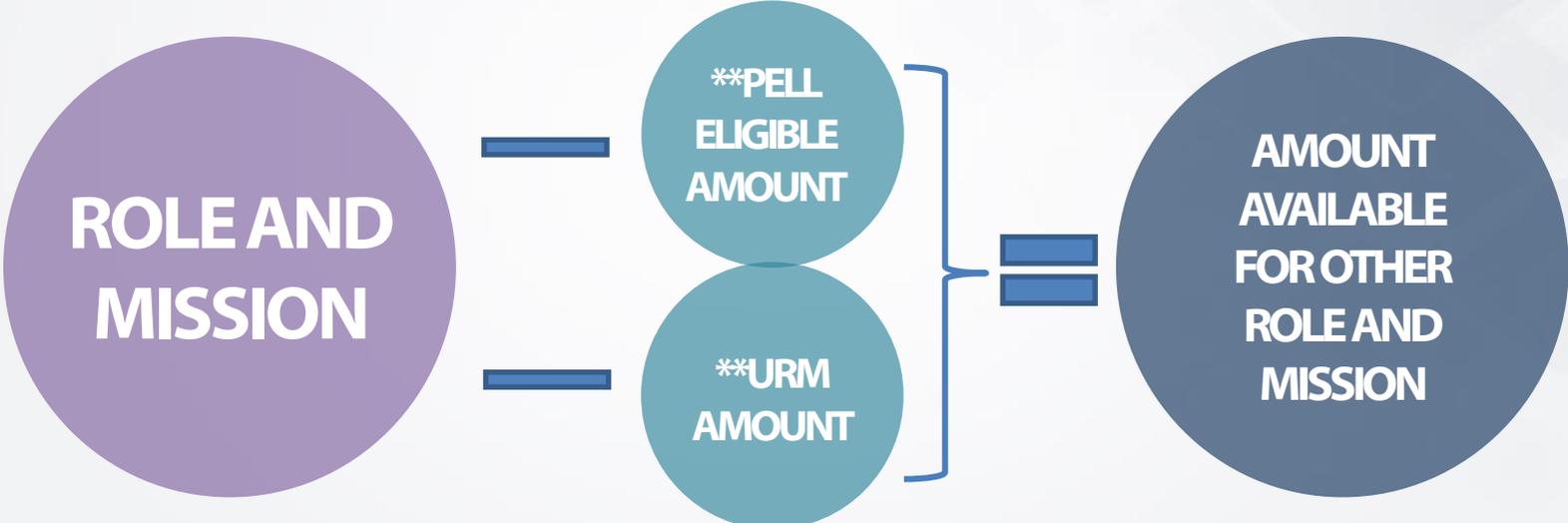
Optional Measure

ROLE AND MISSION

Pell Eligibility is treated differently than other Role and Mission metrics. It is carved out **first from the Role and Mission fund** and handled first with a separate policy variable.



Resident Only



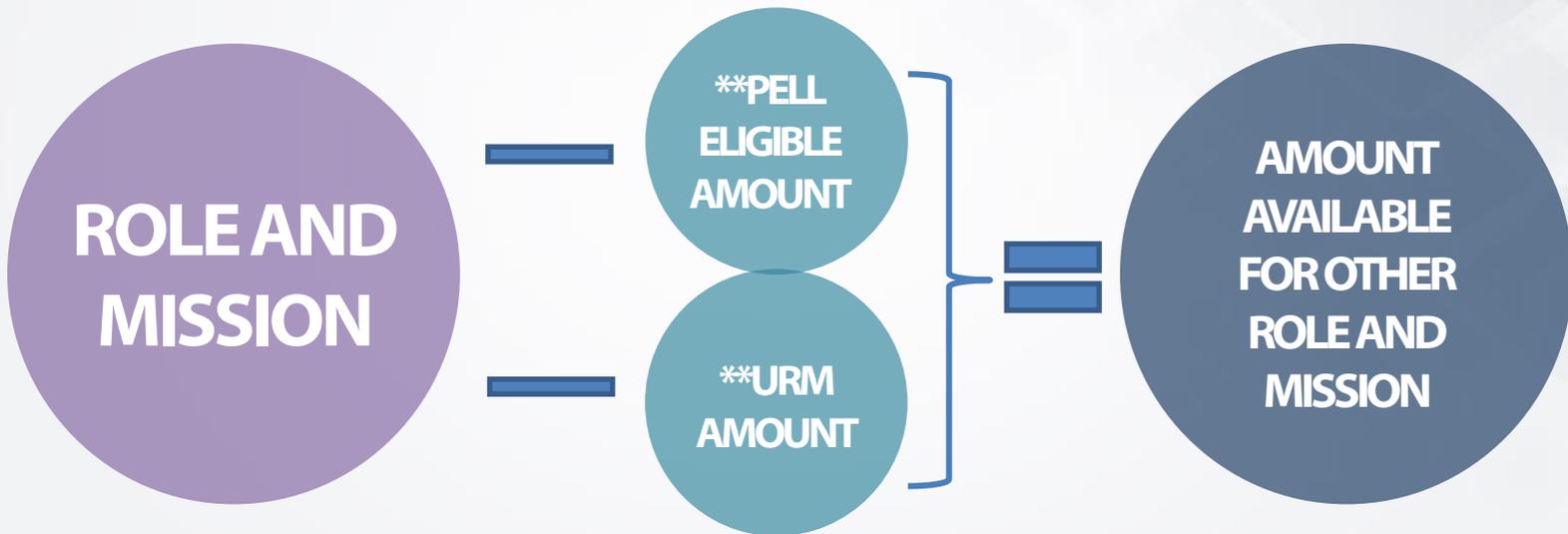
** (COF Support for Eligible students * Support Amount)

Pell Only: Support amount is a variable at least 10% or greater of COF Stipend.

URM Only: Support amount is a variable at a desired percentage.



Decision Point: % for URM



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Remediation

Most Remediation



**Number
of
Campuses**

Count-based



**Optional
Metric(s)**

Optional Measure

ROLE AND MISSION

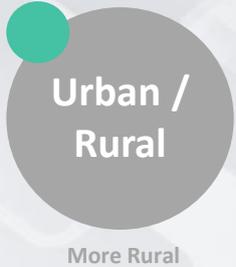
In order to allow very different factors to be treated in a uniform manner, each is reduced to an index between 0 and 100.

$$\text{Value} = \text{Index Score} * \text{Weight}$$

$$\text{Index Score} = (\text{Value} - \text{Minimum}) / (\text{Maximum} - \text{Minimum})$$

ROLE AND MISSION

Using **Urban / Rural** as an example, this data definition looks at the population of the home county as shown below:



Institution	Population of Home County
Community College 1	607,070
Community College 2	469,193
High Research Univ. 1	310,048
Research University 1	269,785
Four-Year University 1	15,507

ROLE AND MISSION - SCORE

In order to allow very different factors to be treated in a uniform manner, each is reduced to an index between 0 and 100.

Institution	Value
Institution A	95,000
Institution B	41,000
Institution C	29,000
Institution D	29,000
Institution E	85,000

Maximum in the range: 162,000
 Minimum in the range: 29,000

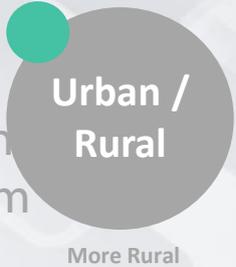
$$\frac{(value - minimum)}{(maximum - minimum)} * 100 = \text{Index Score}$$

$$\frac{(95,000 - 29,000)}{(162,000 - 29,000)} * 100 = 50.00$$

For any scores where lower values are associated with higher costs, the reciprocal is taken as 1 – (Index Calculation)

ROLE AND MISSION

In order to enable comparison, all measures must be converted into an **Index Score**. This is done by using the maximum and minimum values to establish a range.



Institution	Population of Home County	Urban / Rural Converted Index Score (Reciprocal)
Community College 1	607,070	7.40
Community College 2	469,193	28.67
High Research Univ. 1	310,048	53.22
Research University 1	269,785	59.43
Four-Year University 1	15,507	98.66

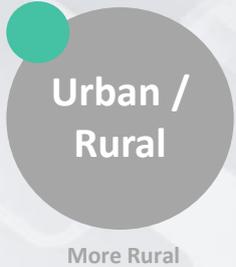
ROLE AND MISSION

Since scores are assessed at the institutional level, but **weights are applied at the institutional grouping level**, all institutions first must be placed into **groupings** to treat similar institutions similarly in Role and Mission.

	Weight %					
Role and Mission	Group A	Group B	Group C	Group D	Group E	Group F
Selectivity of the Institution						
Number of Campuses						
Rural or Urban						
Low Student Enrollment						
UG Programs that have a High Cost Per Student						
Research						
Graduate Programs that Have a High Cost Per Student						
Remediation						
Total (must equal 100%)	100%	100%	100%	100%	100%	100%

ROLE AND MISSION

Next, weights are applied to the Institutional groupings. This is the point in the model where **policy decisions are made** to reflect what is important to each group of institutions.



Institution	Population of Home County	Urban/Rural Score	Group Weights	Weighted Score
Community College 1	607,070	7.40	10%	0.74
Community College 2	469,193	28.67	10%	2.86
High Research Univ. 1	310,048	53.22	0%	0.00
Research Univ. 1	269,785	59.43	5%	2.97
Four-Year Univ. 1	15,507	98.66	20%	19.73

ROLE AND MISSION

Using Low Enrollment as a second example, weights are applied to each factor based on their institutional groupings.



Low FTE Count

Institution	FTE Enrollment Count	Low Enroll. Score	Low Enrollment Group Weights	Low Enrollment Weighted Score
Community College 1	11,806	64.90	10%	6.49
Community College 2	20,527	36.80	10%	3.68
High Research Univ. 1	31,945	0.00	0%	0.00
Research Univ. 1	13,070	60.83	0%	0.00
Four-Year Univ. 1	2,301	95.54	30%	28.66

ROLE AND MISSION

Using research as a final example of a factor, institutions without research in their mission would elect to weight this metric at zero.



Research Activity

Institution	Research \$ / FTE Faculty	Research Score	Research Group Weights	Research Weighted Score
Community College 1	-	0.00	0%	0.00
Community College 2	-	0.00	0%	0.00
High Research Univ. 1	85.0	94.13	30%	28.24
Research Univ. 1	3.70	4.10	10%	0.41
Four-Year Univ. 1	-	0.00	0%	0.00

ROLE AND MISSION

The (example) weighted scores are then **added up for each institution** across all of the Role and Mission factors.

Institution	Urban/Rural Weighted Score	Low Enroll. Weighted Score	Research Weighted Score	<i>Factor..X Weighted Score(s)</i>	<u>Sum of Weighted Scores</u>
Community College 1	0.74	6.49	0.00	8.85	16.08
Community College 2	2.86	3.68	0.00	12.39	18.93
High Research Univ. 1	0.00	0.00	28.24	24.68	52.92
Research Univ. 1	2.97	0.00	0.41	21.17	24.45
Four-Year Univ. 1	19.73	28.66	0.00	4.69	53.08

ROLE AND MISSION

Since dollars are to be allocated by **governing board**, the weighted scores are **added up by board and then divided by the number of institutions** in that governing board in the model.

Institution	Sum of Weighted Scores	Sum Scores by Governing Board	Number of Institutions in the Table	Score by Governing Board
Community College 1	16.08	35.01	2	17.50
Community College 2	18.93			
High Research Univ. 1	52.92	52.92	1	52.92
Research Univ. 1	24.45	24.45	1	24.45
Four-Year Univ. 1	53.08	53.08	1	53.08

ROLE AND MISSION

Finally, the governing board scores are added up to create a grand total. The board total is divided into the grand total to determine a percentage share of points. **This % share is applied to the to Role and Mission Funding Component.**

ROLE & MISSION FUNDING
EXAMPLE:
\$10 MILLION

Board	Board Score	Grand Total	Share of Points	Dollars from Role and Mission
Community College Board	17.50	147.95	11.8%	\$1,182,832
High Research Univ. Board	52.92	147.95	35.8%	\$3,576,884
Research U. Board	24.45	147.95	16.5%	\$1,652,585
Four-Year U. Board	53.08	147.95	35.9%	\$3,587,699



NEXT
Performance

Assessing performance uniformly across
all institutions.

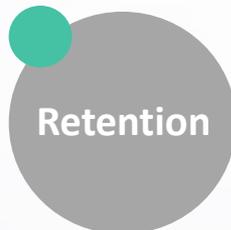
PERFORMANCE

Metrics for performance are **measured and weighted at the institutional level** and are uniformly applied. Money is allocated at the governing board level.



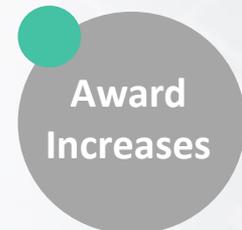
Completion
& Transfers

Awards by Level
And 2 to 4



Retention

By Threshold



Award
Increases

Absolute Number Year over Year

PERFORMANCE

Completion and Transfers have **two bonus elements** nested within their measurement. These metrics feature bonuses for high-demand fields, Pell-eligible students, and URM students.



Awards by Level

Completions: Different weights by award type

- **Certificates = 0.25**
- **Associates = 0.50**
- **Bachelors = 1.00**
- **Masters = 1.25**
- **Doctoral/Professional = 1.75**



2 to 4; >= 18 SCH

Transfers: Number of students with 18 credit hours or more who transfer from community colleges to a public 4-year institution.



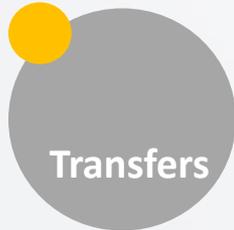
Decision Point: Weights for Completions/Transfers



Awards by Level

Completions: Different weights by award type

- **Certificates = 0.25**
- **Associates = 0.50**
- **Bachelors = 1.00**
- **Masters = 1.25**
- **Doctoral/Professional = 1.75**



2 to 4; >= 18 SCH

Transfers: Number of students with 18 credit hours or more who transfer from community colleges to a public 4-year institution.

- **Transfers = 0.25**

PERFORMANCE

Completion weighting by high-demand field and level features several fixed weights as well as a flexible bonus for these variables. These weights and bonuses would apply to every institution. There are also **additional bonuses** for Pell and URM.

Priority Indication	Transfer (0.25)	Certificates (0.25)	Associates (0.50)	Bachelors (1.00)	Masters (1.25)	Doctoral (1.75)
High Priority <i>(Apply a 1.5 bonus)</i>	200	105	300	450	113	60
All Others		70	200	300	75	40
<i>Total (with weights applied)</i>	50	44	250	750	428	228

Total awards and transfers for count in the model = **1,263.**



Decision Point: High Priority Credentials = STEM + Healthcare

Priority Indication	Transfer (0.25)	Certificates (0.25)	Associates (0.50)	Bachelors (1.00)	Masters (1.25)	Doctoral (1.75)
High Priority <i>(Apply a 1.5 bonus)</i>	200	105	300	450	113	60
All Others		70	200	300	75	40
<i>Total (with weights applied)</i>	50	44	250	750	428	228

Total awards and transfers for count in the model = **1,263**.



Decision Point: Limit Performance to these metrics



**Completion
& Transfers**

Awards by Level
And 2 to 4



Retention

By Threshold



**Award
Increases**

Year over Year

PERFORMANCE

The remaining metrics have no additional bonuses and are applied uniformly to all institutions.



By Threshold

Retention: measured at **30/60/90** for 4-year; **15/30/45** for 2-year.



Year over Year

Award Increase: year over year increase as a moving average.**
**This metric is still being designed.

PERFORMANCE

Retention is measured uniformly by assessing the numbers of students at **25%, 50%, and 75%** momentum points toward a degree.

Institution	25% (15 / 30)	50% (30 / 60)	75% (45 / 90)	Total
Number crossing threshold	100	100	100	
Institution A	25	50	75	150



Decision Point: Weights for Student Progress Points

Institution	25% (15 / 30)	50% (30 / 60)	75% (45 / 90)	Total
Number crossing threshold	100	100	100	
Institution A	25	50	75	150

PERFORMANCE

The final performance measure captures **increases in awards and transfers** year to year. The **net positive change** is what is measured.

Award Year(s)	Transfer (0.25)	Certificates (0.25)	Associates (0.50)	Bachelors (1.00)	Masters (1.25)	Doctoral (1.75)
2012-13	200	50	65	300	150	45
2013-14	250	55	70	320	155	45
Net Difference	50	5	5	20	5	0

PERFORMANCE

Since all three performance metrics are student count related, there is no need to create an index score. Rather, counts and size are taken into consideration as all institutions will share a common scale.

Institution	Completions	Retention	Award Increases
Community College 1	369	600	60
Community College 2	836	1500	180
High Research Univ. 1	8,509	15,000	450
Research Univ. 1	3,196	5,000	150
Four-Year Univ. 1	434	800	100



Decision Point: Weights for Student Progress Points

Option 1 (NCHEMS)	Completions 50%	Retention 30%	Award Increases 20%
Option 2 (Homework)	Completions 75%	Retention 20%	Award Increases 5%

PERFORMANCE

Finally, the governing board scores are added up to create a grand total. The board total is divided into the grand total to determine a percentage share of points. **This % share is applied to the to Performance Funding Component.**

**PERFORMANCE
FUNDING**

**EXAMPLE:
\$10 MILLION**

Board	Board Score	Grand Total	Share of Points	Dollars from Performance
Community College Board	1281	13,731	9%	\$ 932,595
High Research Univ. Board	8845	13,731	64%	\$ 6,441,863
Research U. Board	3128	13,731	23%	\$ 2,278,140
Four-Year U. Board	477	17,731	3%	\$ 347,402



NEXT

Allocation of State Appropriations to Governing Boards

Adding up all amounts to create a new amount to each governing board.

ALLOCATION OF STATE APPROPRIATION

All elements are rolled up to the governing board level and compared to previous year's funding amount as a percentage change.

Governing Board	Specialty Programs	FY 15-16 Total	% Difference
Governing Board A	\$1,050,000	\$11,115,000	+ 11%

Performance
\$3,100,000

Fee for Service

STABILITY & PREDICTABILITY

Finally, two mechanisms are in place to act as protections to the model's final calculations: **Guardrails** to ensure no single board loses more than a set proportion per year, and a **Cost of Operations Subsidy**, which is a flat amount awarded to each board uniformly.

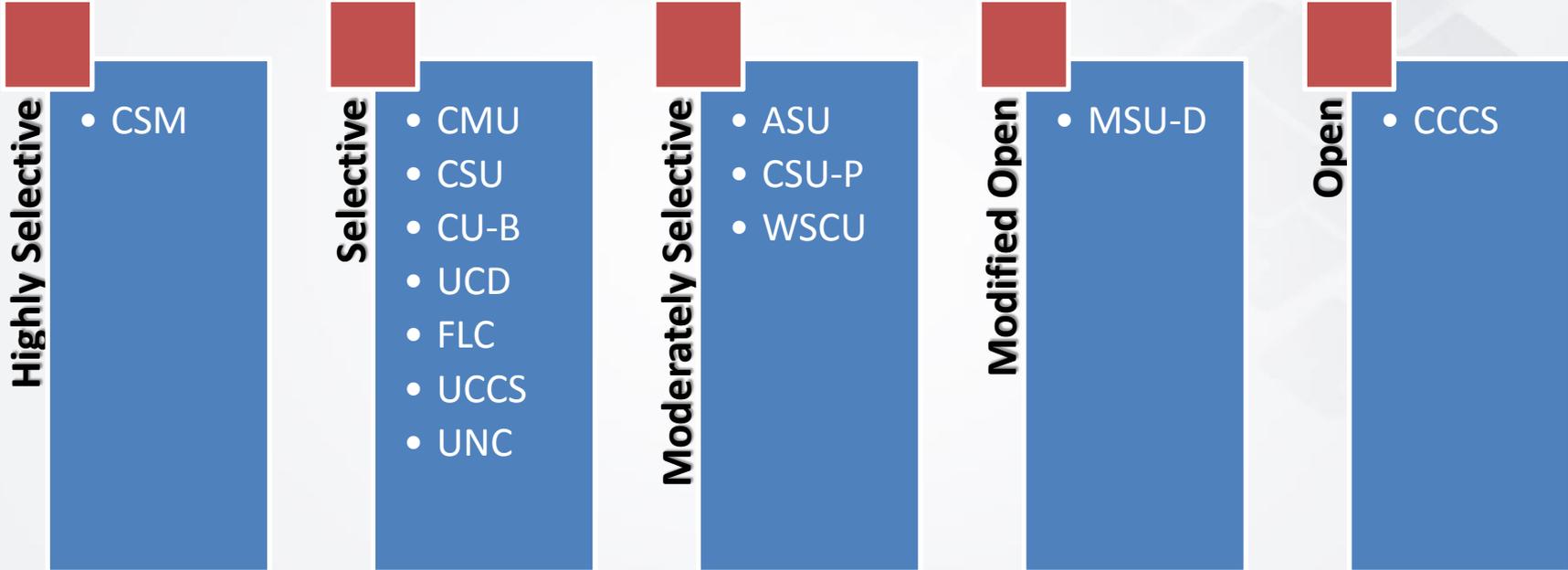


Guardrails: Also known as stop-loss/stop-gain, this sets a “floor and ceiling” on the model's final calculation to ensure no single board loses or gains more than a set proportion. To offset any board from going under that amount, funds are redistributed from other net-gaining boards to bring another board's percentage difference to the amount set in the stop-loss parameter.



Cost of Operations: If necessary, a flat dollar amount awarded to each board. In practice, this also acts as a functional . This feature may or may not be utilized in the model.

Statutory



Carnegie



Research

- CU-B
- CSM
- CSU
- UCD



Masters/Doctorial

- UNC
- UCCS
- ASU
- CSU-P



Baccalaureate

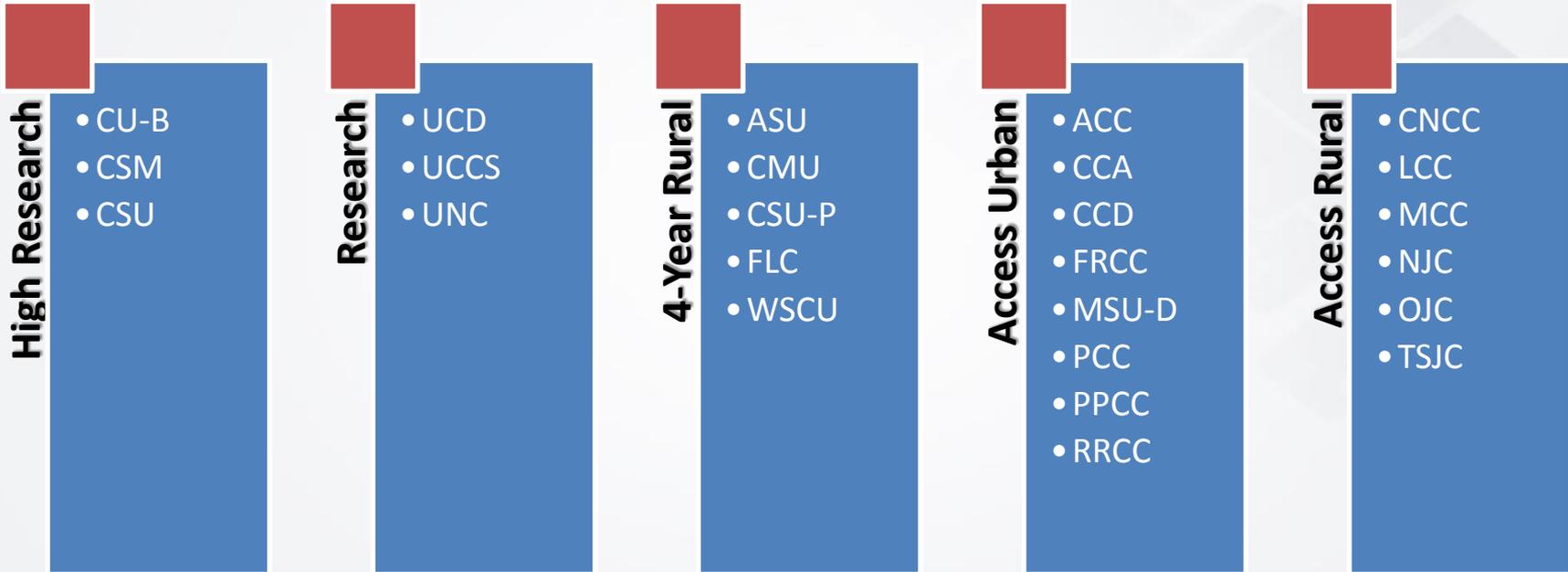
- CMU
- FLC
- MSU-D
- WSCU



Associates

- CCCS

Modified Carnegie





Decision Point: Grouping Preference

Decision Point: Role and Mission Weights within Preferred Grouping

