

UAS Associates of Science Degree: Re-alignment in the STEM Pipeline

Goal: To re-engineer the A.S. from a "just-for-transfers-only" resource and towards an integrated stepping stone on the STEM pathway -- from Alaska rural high-school student populations to flagship 4-yr STEM degrees --- by increasing linkages among the 2 rural & Juneau campuses, between the A.S. degree and 4-yr STEM programs on the Juneau campus, and among UAS campuses and partners engaged in culturally relevant activities in outlying communities.

Problems & Solutions:

Problems	Solutions
Stringency about GERs requirements	<ul style="list-style-type: none"> • Set minimum GER benchmarks, "take 3 of 5" • Refine to GERs that maximize future degree flexibility
Insufficient low division options to achieve 60-credits	<ul style="list-style-type: none"> • Harmonize courses across Ketchikan, Sitka, & Juneau • Incentivize core faculty to stack low division course option • Incentivize "instructor approval" for 300-level course pre-reqs • Review and expand 'hidden' 100-300 level course offerings • Project offerings of core 100-300 courses in baccalaureate 6-yr plans
No bridge to 4-yr STEM degrees	<ul style="list-style-type: none"> • Align thematic focus with 4-yr degrees, e.g. Marine Bio, Env. Science • Integrate A.S. co-management with baccalaureate programs • Add STEM 'jumpstarters' that connect to 4-yr flagship degrees • Create financial incentives, e.g., tuition waivers, for retention of AS graduates into 4 yr STEM degrees
Poor representation	<ul style="list-style-type: none"> • Redirect B.S. students falling thru cracks through advising & institutional research • Incentivize core programs to offer dual credit course/yr for transitional & high school students • Cooperate with partners - STEP, GHF, SHI - to incentivize dual credit & A.S.-enrollment scholarships

Activities:

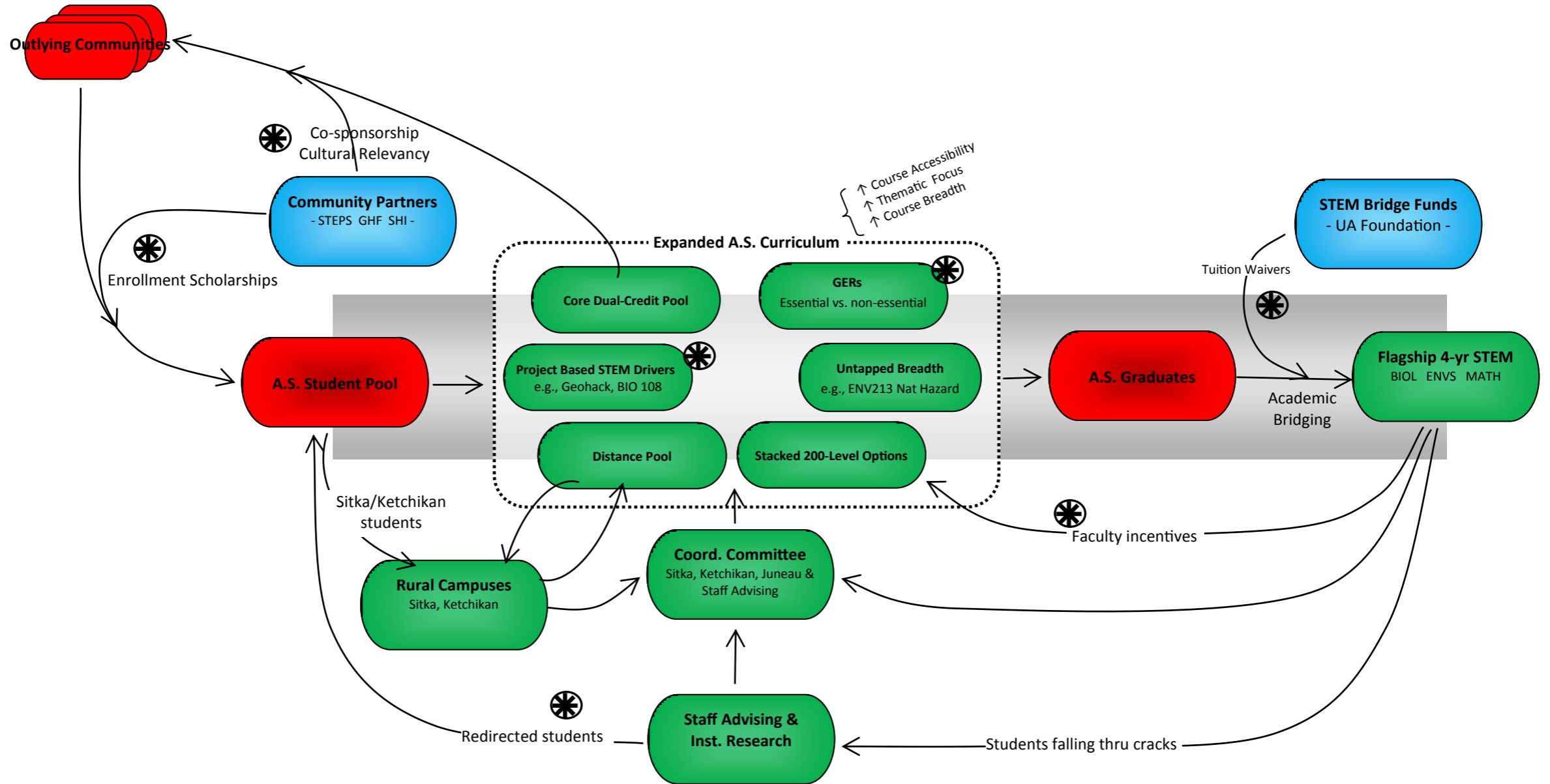
Inflow:

- Centralize advising within baccalaureate program
- Network with outlying campuses to align AS efforts and STEM baccalaureate programs
- Increase visibility of the A.S. option
- Create workflows with UAS institutional research & advising staff to identify students potentially falling thru cracks and with incomplete progress toward 4-yr degrees
- Increase pathways for rural high school students to make progress - regular dual credit feeders & distance based interaction
- Identify/increase culturally relevant STEM coursework appropriate for Southeast Alaska student population
- Increase partnerships - STEPS, Goldbelt, and Sealaska -- to leverage other longer-term efforts engaging rural high school students
- Make strategic changes in the program to align it with prospective tuition-free initiatives specific to pre-baccalaureate programs, like the [College for All Act](#)

Outflow:

- Increase latitude within GER requirements
- Add drivers to GER/STEM programs
- Increase breadth of course offerings by leverage distance based STEM courses @ rural campuses
- Re-engineer curriculum to align better with 4-yr flagship programs - BIOL/ENVS/MATH
- Increase partnerships in communities to identify/establish clear work-study opportunities for early STEM enrollees and graduates
- Require degree consultations for A.S. near completion
- Create workflows with UAS institutional research & advising staff to evaluate post-graduation success

Building Continuity in the STEM Pipeline through a Re-Engineered Associates of Science Degree



⊛ = Key areas to develop & incentivize

Curriculum mapping for the Associated of Science degree

Course	Course Name	Course n	Credits	Degree Program	Base Campus	Distance	Identified in 6-yr	Annual Course Avail	GER	Pre-Req free?	Pre-Req	Advisor Approvability - Catalog	Lab?	Distance-Lab developed?	Summer?
BIOL	Fundamentals of Biology I	115	4	B.S. Biology/B.S. Envs		yes	yes	yes	yes	no	MATH105		Yes	Yes	no
BIOL	Fundamentals of Biology II	116	4	B.S. Plant/B.S. Envs		yes	yes	yes	yes	no	BIOL115		Yes	Yes	no
BIOL	Plant Biology	239	4		UAS-S	no	yes	maybe	no	no	BIO116		Yes	no	no
BIOL	Ecology	271		B.S. Biology	UAS-J	no	yes	yes	no	no	BIOL 115/116 or ENV5 102		yes	no	
ENVS	Earth and Environment	102	4	B. S. ENVS	UAS-J	no	yes	yes	yes	no	MATH105		yes	no	
ENVS	Natural Hazards	213	3		UAS-J	no	yes	yes	no	no	ENVS102/MATH151		no	no	
ENVS	Introduction to GIS	338	3	B.S. ENVS	UAS-J	no	yes	yes	no	yes			yes?	no	
ENVS	Biogeography and Landscape Ecology	416	4		UAS-J	no			no	no	ENVS102		yes	no	
ENVS	Forest Ecosystems	430	3		UAS-J	no	yes		no	no	ENVS102		no	no	
GEOG	Temperate Rainforest Ecosystems	210	3		UAS-J	no		yes	no	no	ENVS102				
GEOG	Sustainable Resource Management	313	3	B.S. ENVS	UAS-J	no		yes	no	no	ENVS102		no		
MATH	Intermediate Algebra	105	4			yes	yes	yes	no	no	MATH055		no		
MATH	College Algebra for Calculus	151	4			yes	yes	yes	yes	no	MATH105		no		
MATH	Trigonometry	152	3			yes	yes	yes	yes	no	MATH151				
MATH	Calculus I	251	4	B.S. Biology/B.S. ENVS		yes	yes	yes	no	no	MATH152				
CHEM	General Chemistry I	105	3	B.S. Biology/B.S. ENVS		no	yes	yes	Yes	no	MATH151/CHEM1				
CHEM	General Chemistry I lab	105L	1	B.S. Biology/B.S. ENVS		no	yes	yes					yes		
CHEM	General Chemistry II	106	3	B.S. Biology/B.S. ENVS		no	yes	yes	yes		CHEM105/105L				
CHEM	General Chemistry II lab	106L	1	B.S. Biology/B.S. ENVS		no	yes	yes					yes		
FISHTECH	Fisheries of Alaska	120	3	A.A. S. Fish Tech	UAS-K	yes	yes			yes					
FISHTECH	Fisheries Management Techniques	211	3	A.A. S. Fish Tech	UAS-K	yes	yes			no	FT274				
FISHTECH	Freshwater Ecology	270	3	A.A. S. Fish Tech	UAS-K	yes	yes			no	FT120/WRTG111				
FISHTECH	Fisheries Management, Law and Econo	272	3	A.A. S. Fish Tech	UAS-K	yes	yes			no	FT120/WRTG111				
FISHTECH	Fish Biology	274	3	A.A. S. Fish Tech	UAS-K	yes	yes			no	FT120/WRTG111				
ANTH	Biological Anthropology	205	3			yes		yes	yes	yes			no		
ANTH	Humans and the Environment	312	3			yes		yes							