

BUILDING A NATIONAL MODEL FOR
EXCELLENCE IN NATIVE AMERICAN
HIGHER EDUCATION PROGRAMS



ANSEP ALASKA NATIVE SCIENCE & ENGINEERING PROGRAM



PRESIDENTIAL AWARDS FOR
EXCELLENCE IN SCIENCE,
MATHEMATICS AND
ENGINEERING
MENTORING
2004



ALASKA FEDERATION
OF NATIVES
DENALI AWARD
2005



REGINALD JONES
FOUNDER'S
AWARD
2009



HARVARD Kennedy School
ASH CENTER
for Democratic Governance
and Innovation

TOP 25 INNOVATIONS
IN AMERICAN
GOVERNMENT
2012



U.S. DEPARTMENT OF THE
INTERIOR PARTNERS
IN CONSERVATION
AWARD
2013



U.S. DEPARTMENT OF
ENERGY MINORITIES
IN ENERGY AWARD
2014



ANSEP COMPONENT REPORT



THEY ARE 12 16 AND 22 YEARS OLD

THEY COME FROM PLACES

LIKE KIVALINA, PORT HEIDEN, TUNTUTULIAK, AND BETHEL,

AND THEY WANT TO ONE DAY BECOME
THE FIRST ENGINEER OR SCIENTIST

FROM THEIR VILLAGE.

The **ALASKA NATIVE SCIENCE & ENGINEERING PROGRAM** inspires, educates, and propels students forward. By infusing the fundamental values of community, family, and collaboration into all elements of the program, ANSEP builds a welcoming university environment and provides a cornerstone for success. The program engages students at critical times in their academic careers, identifying participants early,



promoting an attitude of readiness, and preparing students for the challenges ahead. Through ANSEP, students have access to motivating middle school enrichment activities, college classes in high school, bridging programs, internships, and research opportunities that deliver intensive training for university academics and industry involvement. Our objective is to effect systemic change in the hiring patterns of Alaska Natives in science and engineering by placing our students on a career path to leadership.





BUILDING A SUSTAINABLE FUTURE

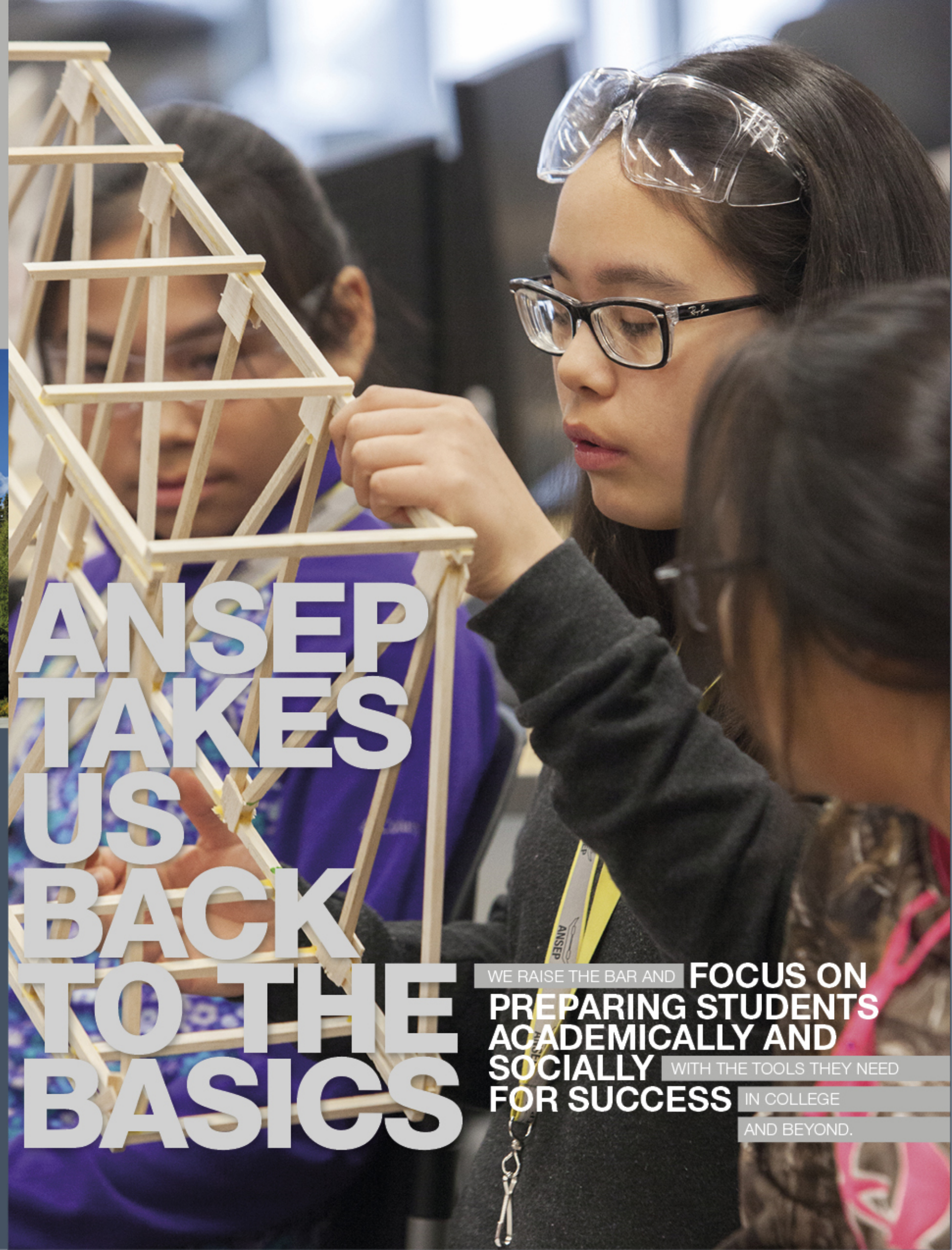


We start in middle school and offer a series of linked components that continue through high school, college, graduate school, and into professional life. The program began in 1995 with a single student. Today, there are over 2,000 middle school, high school, and university students. According to the Urban Institute, ANSEP students at every level are successful at rates far exceeding national and state numbers.

- ANSEP middle school students complete Algebra 1 before graduating from eighth grade at a rate greater than 75%. The national average is 26%.
- 95% of ANSEP high school Acceleration Academy students advance one full level in math or science each summer.
- More than 75% of all ANSEP students who have enrolled in science or engineering BS degrees since 2010 are still enrolled or have graduated.

WE NEED TO BE PAYING FOR SUCCESS. SUCCESS MEANS OUR STUDENTS ARE ACADEMICALLY AND SOCIALLY PREPARED FOR COLLEGE; AND CONFIDENT AND READY TO ACCEPT THE CHALLENGE OF BUILDING A BETTER ALASKA.

We are working to expand opportunities that foster success. First, by working with policy makers so that money flows only to science and engineering programs that demonstrate successful academic outcomes. Secondly, by working with districts to weave ANSEP components into the fabric of the K12 system. These are key steps to institutionalizing ANSEP and building a sustainable program for the long term.



ANSEP TAKES US BACK TO THE BASICS

WE RAISE THE BAR AND **FOCUS ON**
PREPARING STUDENTS
ACADEMICALLY AND
SOCIALLY WITH THE TOOLS THEY NEED
FOR SUCCESS IN COLLEGE
AND BEYOND.



"I WANT TO COME BACK TO ANSEP
BECAUSE IT FEELS LIKE HOME WITH
GOOD PEOPLE ALL AROUND ME.
**IT'S LIKE
A BIG FAMILY -
A REALLY, REALLY
BIG FAMILY."**

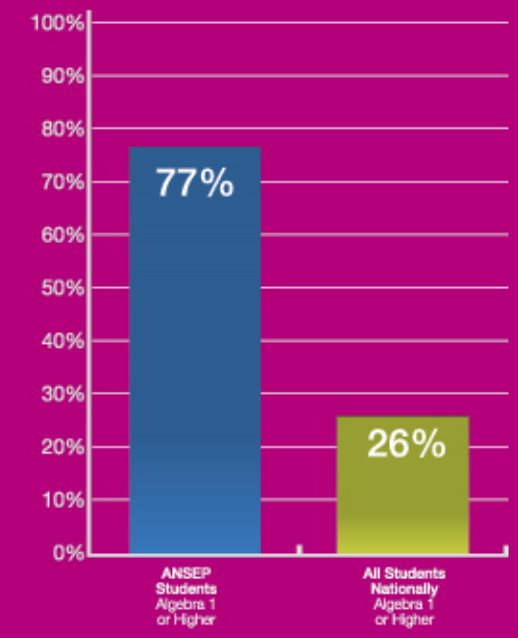
MIDDLE SCHOOL ACADEMY



MIDDLE SCHOOL ACADEMY is a two-week, residential, science and engineering experience. Students build a top end desktop computer on the first day and earn the right to keep it by successfully completing Algebra 1 before they start high school. They learn hands on about heat transfer, biology, marine science, alternative energy, and more. We keep these young students excited and engaged each subsequent year they are in middle school with Career Explorations. Career Explorations brings students who have successfully completed Middle School Academy back to campus for an intense five-day hands-on project based exploration exercise.

Eligible students must be making progress toward finishing Algebra 1 prior to eighth grade graduation. More than 75% of the Academy students meet the goal of completing Algebra 1 before eighth grade graduation. The national average for all students is 26%. We kicked off Middle School Academy in 2010 as a way to engage and inspire our students early in their education. The Academy was so successful that we decided to build on our investment, expand to a year-round model, and increase the number of new students engaged to 650 annually. This means that there will be approximately 4,000 ANSEP students in the pipeline by 2020.

MIDDLE SCHOOL ACADEMY/ 8TH GRADE MATH COMPLETION



FOUNDING PARTNERS





HIGH SCHOOL ACCELERATION COMPONENTS

For a high school student, the benefits of having direct access to a college environment, university faculty, and an encouraging peer group are invaluable. Students earn college and high school credit for courses taken during ANSEP Acceleration Components. All the instruction is from university faculty. There are now two separate Acceleration Components.

ACCELERATION ACADEMY
High school students who have participated in this summertime five-week, residential, summer academy at the University of Alaska Anchorage (UAA) can attest to the pivotal role it played in their future success. Students are engaged with hands-on engineering and science projects, while enrolling in college-level classes, taught by UAA faculty, in areas

including:

- Engineering
- Biology
- Geology
- Chemistry
- Physics
- College Algebra
- Trigonometry
- Calculus 1, 2, and 3
- Differential Equations
- Linear Algebra

ACCELERATION HIGH SCHOOLS

Building on the success of Acceleration Academy, we started the first full time ANSEP Acceleration High School during fall of 2016. ANSEP Acceleration High Schools:

- Support students of all career interests;
- Dramatically improve college readiness;
- Produce high school graduates with a year or more of college credits earned

ANSEP ACCELERATION ACADEMY
Advanced Academics
and Career Exploration in High School



95%
of students
advance 1 level
or more in math or
science each summer

for elementary education, business management, psychology, liberal studies, science, engineering, and others;

- Reduce the time to degree for college students;
- Save families a year or more in college costs;
- Save scholarship donors a year or more in student funding;
- Save the state many millions of dollars annually;
- Increase the economic opportunities for thousands of Alaskans.



"DURING THE SCHOOL YEAR

I'M A STUDENT
AT BETHEL
REGIONAL
HIGH SCHOOL

**BUT
IN THE
SUMMER
I'M A
COLLEGE
STUDENT
AT ANSEP."**

FOUNDING PARTNER

ExxonMobil



**“SUMMER
BRIDGE
STUDENTS
HAVE BECOME
MY OTHER
FAMILY.”**

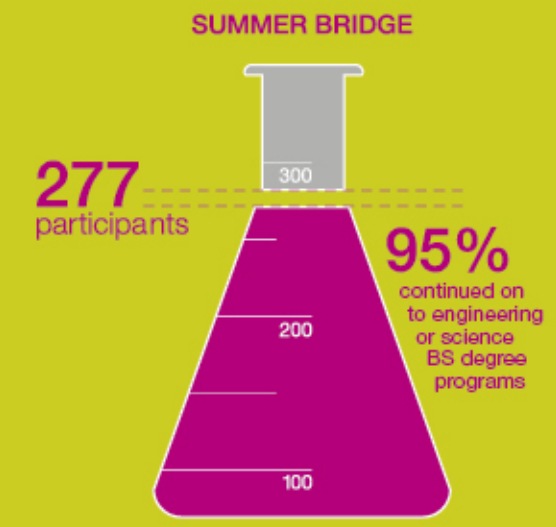
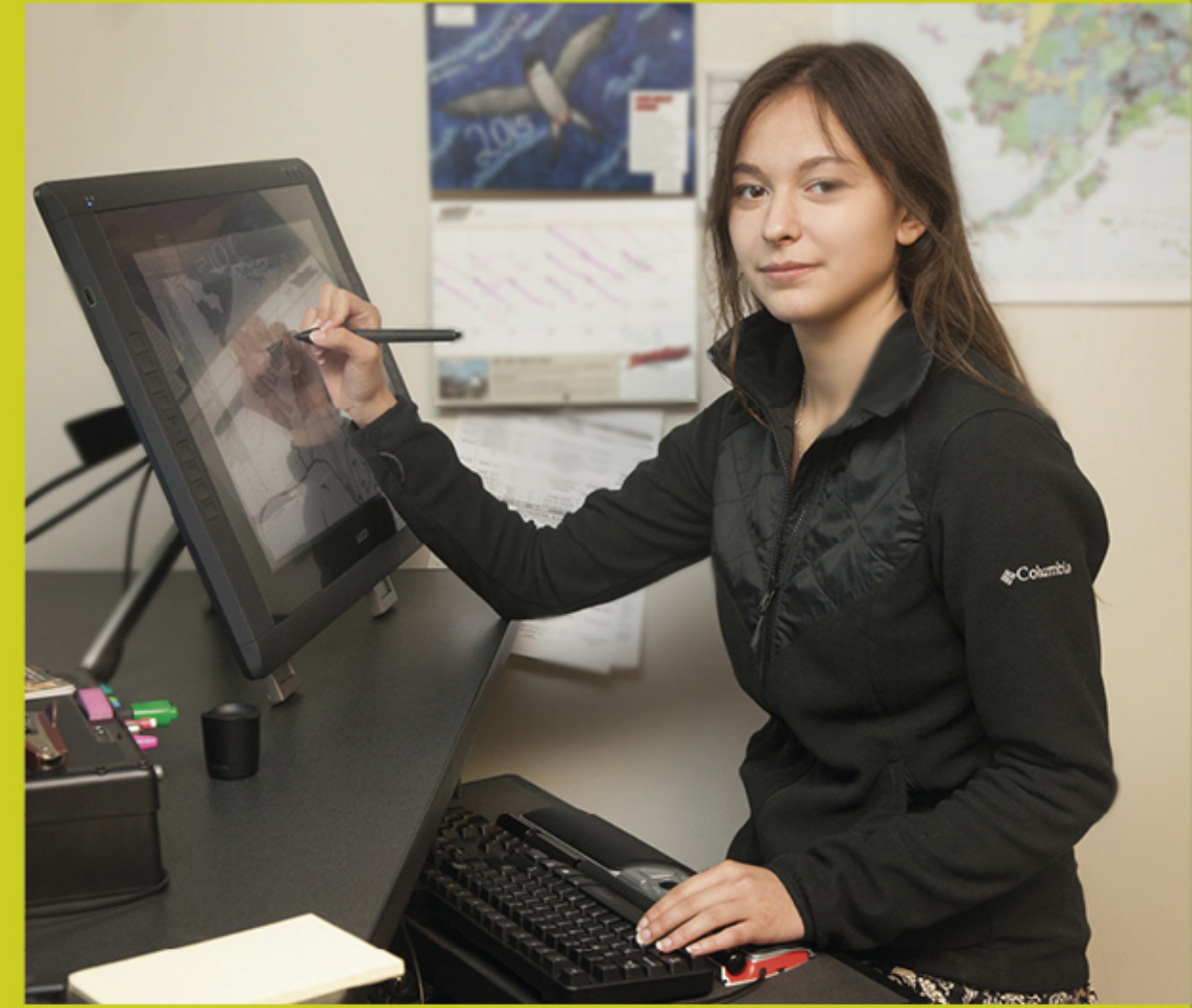
**WE COMPLETED
DIFFERENTIAL EQUATIONS
TOGETHER
AND I WORKED AT BP USING
MICROSOFT EXCEL TO HELP
DETERMINE THE CORRECT INTERVAL HOURS
FOR THE MAINTENANCE OF EQUIPMENT.”**

SUMMER BRIDGE

SUMMER BRIDGE is a fast paced, challenging experience that gives students the opportunity to earn scholarship support and develop professional networks for future internships and careers. Recent high school graduates who are interested in engineering and science BS degree programs at the University of Alaska are eligible. During the ten-week Summer Bridge component each student completes a university-level math class and works with industry professionals within

our partner organizations, which include private firms, publicly held companies and government agencies. Some students work in the field while others gain experience

working in a corporate setting, but all students broaden their knowledge of career opportunities as they focus on solving real-world problems in engineering and science.



FOUNDING PARTNERS





“I
JOINED
ANSEP
WHEN I
WAS IN
SIXTH
GRADE,

NOW I'M A SOPHOMORE IN COLLEGE STUDYING ELECTRICAL ENGINEERING.

ANSEP HAS PROVIDED ME

WITH THE GUIDANCE AND

OPPORTUNITY TO BE SUCCESSFUL

IN SCHOOL AND MY PROFESSION.”

UNIVERSITY SUCCESS

UNIVERSITY SUCCESS

At the university level, while away from family and their hometowns, students are most successful when they are part of an academic community. With this understanding, ANSEP provides much more than academic support and financial aid to students in pursuit of BS degrees in science or engineering. Bringing together a community of students, faculty, staff, and industry partners, the program is designed to strengthen social ties, encourage teamwork, stimulate cultural enrichment, and provide opportunities for professional development, both on and off campus.

GRADUATE SUCCESS

For many ANSEP graduates, success is a journey for which there is no end. Many students continue their journey through graduate school in Alaska with ANSEP. Other students, earning their BS degrees here, travel outside to earn their masters, PhD degrees, and even medical doctorates. Currently, there are dozens of Alaska Native students enrolled

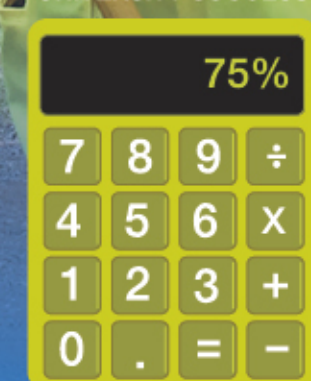
in MS and PhD programs in science and engineering at the University of Alaska. They are leaders in their fields, embarking on new discoveries every day, and equally as important, continuing to contribute to the community by inspiring and mentoring others.

ALASKA GROWN FACULTY

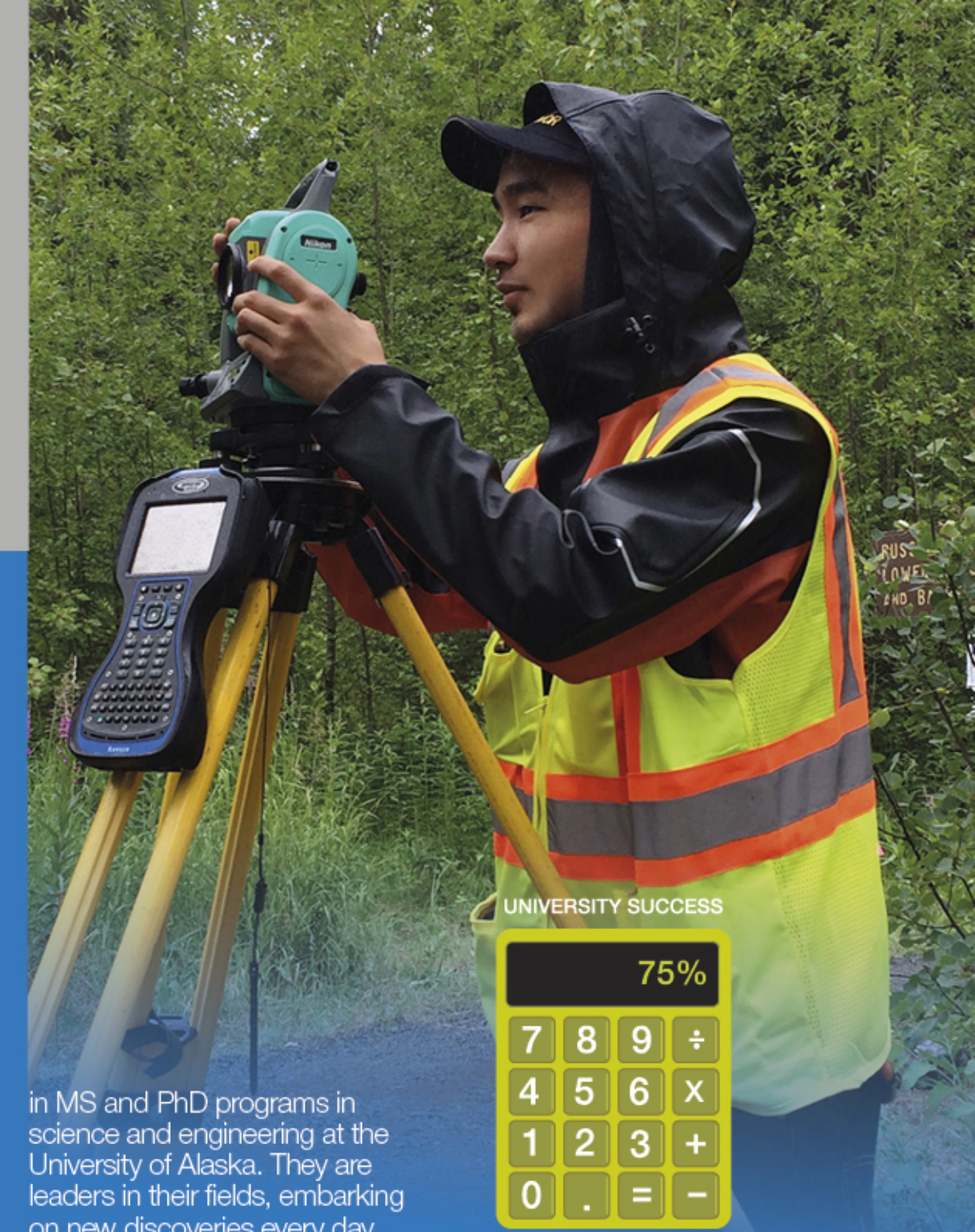
A few years ago we set out to develop Alaska Grown PhDs as faculty for our campuses. Students are provided with fellowship funding for use at highly rated universities. Two former ANSEP students have taken on the challenge, completed their Doctoral work,

and joined the faculty in the College of Engineering at UAA. Professor Matt Calhoun is the only Alaska Native PhD in civil engineering in the world and Professor Michele Yatchmeneff is the only Alaska Native engineering education PhD in the world. Additional students are participating in the Alaska Grown component.

UNIVERSITY SUCCESS



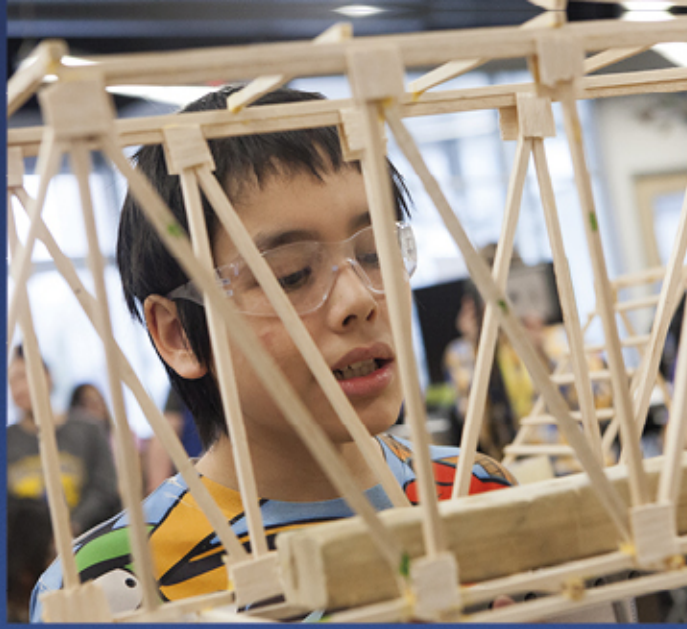
Percentage of ANSEP students who have graduated or are currently enrolled



FOUNDING PARTNERS

Alyeska pipeline





BUILDING A SUSTAINABLE FUTURE:

INSTITUTIONALIZATION AND SUSTAINABILITY MILESTONES

- **ANSEP BUILDING**

The ANSEP Building was fully funded in 2005. It is reserved forever for ANSEP students as a place of safety and belonging.

- **ANSEP ENDOWED CHAIR**

Fully funded in 2008, the ANSEP Endowed Chair guarantees a faculty advocate for the students in perpetuity.

- **EXPANDING OUR REACH**

We are expanding our reach to provide Middle School Academy to 650 new students annually.

- **ANSEP ACADEMY BUILDING**

This building will provide the infrastructure necessary to support the Expanding Our Reach milestone long term.

- **ANSEP ACCELERATION HIGH SCHOOLS**

The Acceleration High Schools bring students who are hyper-prepared academically and socially into university degree programs, save families years of college expenses, and save the state millions of dollars.

- **COMPREHENSIVE EXTERNAL EVALUATION**

We contracted with the Urban Institute to conduct a comprehensive quantitative and qualitative evaluation of ANSEP. The evaluation is complete and provides further evidence of ANSEP success.

- **LEADERSHIP DEVELOPMENT FOR ANSEP STAFF**

Every year ANSEP staff engage in formal and informal professional development opportunities including: continuing education, professional conferences, certificate completion, graduate degree studies, and expanded professional responsibilities.

- **ANSEP ALUMNI AS ENGINEERING AND SCIENCE FACULTY**

The Alaska Grown PhD program has two alumni in the College of Engineering as tenure track faculty and additional students are on the pathway.

- **UNIVERSITY OF ALASKA ANCHORAGE SUPPORT FOR ANSEP STAFF**

The University of Alaska Anchorage and the University of Alaska statewide have stepped up to provide funds to support our professional staff.

- **ANSEP COMMUNITY COUNCIL**

In the fall of 2016, ANSEP formalized a 5 person council of individuals from organizations that have had longstanding commitment to ANSEP's long-term success.



INSPIRATION GUIDANCE OPPORTUNITY

ANSEP.NET



UNIVERSITY of ALASKA
ANCHORAGE



UNIVERSITY OF
ALASKA
FAIRBANKS



UNIVERSITY OF ALASKA
SOUTHEAST
learn • engage • change