



**AgEcon** SEARCH  
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

*The World's Largest Open Access Agricultural & Applied Economics Digital Library*

**This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.**

**Help ensure our sustainability.**

Give to AgEcon Search

AgEcon Search  
<http://ageconsearch.umn.edu>  
[aesearch@umn.edu](mailto:aesearch@umn.edu)

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

# Contribution of Nueta Hidatsa Sahnish College to North Dakota's Economy in 2016



**Randal C. Coon**  
**Nancy M. Hodur**  
**Dean A. Bangsund**



## Acknowledgments

The North Dakota Association of Tribal Colleges and Universities (NDATC) provided financial support for this project. The association is a private, non-profit organization established in 1994 and is comprised of the five Tribal Colleges and Universities (TCUs) located in North Dakota. Member institutions and the Board of Directors are:

Cynthia Lindquist, President, Cankdeska Cikana Community College (CCCC)  
Twyla Baker-Demaray, President, Nueta Hidatsa Sahnish College NHSC  
Laurel Vermillion, President, Sitting Bull (SBC)  
James Davis, President, Turtle Mountain Community College (TMCC)  
Leander “Russ” McDonald, President, United Tribes Technical College (UTTC)

The North Dakota Tribal Colleges are members of American Indian Higher Education Consortium.

This research effort was based on actual expenditures data (annual audits) provided by each of the five respective Tribal Colleges in North Dakota. Special thanks to each of the colleges and individuals that provided requested information. This effort would not have been possible without their participation.

Thanks are extended to Norma Ackerson for document preparation and to our colleagues in the Department of Agribusiness and Applied Economic and the Center for Social Research for document review.

The authors assume responsibility for any errors of omission, logic, or otherwise. Any opinions, finding, and conclusions expressed in this publication are those of the authors and do not necessary reflect the view of the Department of Agribusiness and Applied Economics, North Dakota State University, or the study sponsors.

This publication is available electronically at this web site: <http://agecon.lib.umn.edu/>.

NDSU is an equal opportunity institution.

North Dakota State University does not discriminate on the basis of age, color, disability, gender expression/identity, genetic information, marital status, national origin, public assistance status, race, religion, sex, sexual orientation, or status as a U.S. veteran. Please address your inquiries regarding this publication to: Department of Agribusiness & Applied Economics, P.O. Box 6050, Fargo, ND 58108-6050, Phone: 701-231-7441, Fax: 701-231-7400, Email: [ndsu.agribusiness@ndsu.edu](mailto:ndsu.agribusiness@ndsu.edu).

Copyright © 2017 by Coon, Hodur and Bangsund. All rights reserved. Readers may make verbatim copies of this document for non-commercial purposes by any means, provided this copyright notice appears on all such copies.



## TABLE OF CONTENTS

	<u>Page</u>
List of Tables .....	ii
List of Figures.....	ii
Executive Summary .....	v
Introduction.....	1
Background of Nueta Hidatsa Sahnish College.....	2
Methods.....	2
Results.....	4
Student Economic Impact .....	5
Value of a College Education .....	6
Conclusions.....	13
References.....	15

## LIST OF TABLES

	<u>Page</u>
Table 1. Direct, Secondary, and Total Economic Impacts for Nueta Hidatsa Sahnish College Operations, FY2016.....	4
Table 2. Direct, Secondary, and Total Economic Impacts for Nueta Hidatsa Sahnish College Student Spending, Academic Year 2015-2016.....	6

## LIST OF FIGURES

	<u>Page</u>
Figure 1. Unemployment Rate by Level of Education in the United States, 2015.....	8
Figure 2. Medium Annual Earnings of Adults Age 25 and Older, Full-time Workers in the United States, 2015 .....	9
Figure 3. Ratio of Expected Lifetime Earnings Relative to High School Graduates in the United States, by Education Level, 2005.....	10
Figure 4. Percent Mean Increase in Wages, Bachelor’s Degree and Master’s Degree Compared to High School Diploma, 1973, 1989, and 2007.....	11
Figure 5. Level of Educational Attainment, North Dakota and Forth Berthold Indian Reservation, 2015 .....	12
Figure 6. Level of Educational Attainment, by Degree Type, North Dakota and Fort Berthold Indian Reservation, 2015 .....	13
Figure 7. Graduation and Dropout Rates, North Dakota and New Town School District, 2014-2015.....	13







## Executive Summary

The North Dakota Association of Tribal Colleges (NDATC) is comprised of the state's five Tribal Colleges. Tribal colleges are relatively new in North Dakota with the first college established in 1969. Nueta Hidatsa Sahnish College was chartered in 1973. Tribal colleges were established to provide post-secondary cultural-based educational opportunities on North Dakota's Native American reservations and for the urban Indian population in the Bismarck-Mandan area.

Expenditure and enrollment data provided by each respective college were used to estimate the economic impact for each of the individual colleges and the cumulative impact of the five Tribal Colleges. The combined economic impact of the five colleges is reported in Coon et al. 2017a. This report will focus on the Nueta Hidatsa Sahnish College New Town, North Dakota which serves the Forth Berthold Indian Reservation (FBIR).

Total economic impact (direct plus secondary) of Nueta Hidatsa Sahnish College was nearly \$32.0 million in FY2016. Total business activities (direct plus secondary) in the *Households* Sector (economy-wide personal income) was \$12.7 million, and was 8.1 million in the *Retail Trade* Sector. Nueta Hidatsa Sahnish College employed 80 full-time and 4 part-time workers. Levels of business activity generated by Nueta Hidatsa Sahnish College expenditures would support an additional 73 secondary jobs in various sectors of the North Dakota economy.

In addition to expenditures related to the college's operations, student spending also contributes to the economic impacts associated with the college. Expenditures by full-time and part-time students for personal items, recreation, books, supplies, and room and board were estimated to be \$2.6 million in the 2015-2016 academic year. Total economic impact from student spending was \$6.4 million (\$2.6 million in direct impacts plus \$3.8 million in secondary impacts). Student spending would generate enough economic activity to support 12 secondary (indirect and induced) jobs in North Dakota.

Nueta Hidatsa Sahnish Colleges provides valuable post-secondary educational programs which results in both social and economic benefits. While the social value of a college degree is difficult to quantify, the economic value can be described in terms of business activity, lower unemployment, higher median annual earnings, and a higher total lifetime income. Social and economic benefits accrue to individuals with higher academic achievement. Previous studies have determined that college graduates have, healthier life styles, healthier children, and increased job satisfaction, have shown decreased prejudice, enhanced knowledge of world affairs, and have enhanced social status. Many of these benefits are passed onto succeeding generations. Further college graduates have lower unemployment rates and higher annual incomes. Nueta Hidatsa Sahnish College and its students have substantial impacts on their local economy.



## **Contribution of Nueta Hidatsa Sahnish College to North Dakota's Economy in 2016**

Randal C. Coon, Nancy M. Hodur, and Dean A. Bangsund\*

### **Introduction**

North Dakota has numerous institutions of higher education. The North Dakota University System (NDUS) has 11 colleges and the North Dakota Association of Tribal Colleges (NDATC) consists of five institutions. One of those five institutions is Nueta Hidatsa Sahnish College (NHSC). Located in New Town, NHSC the Fort Berthold Native American Reservation. The Tribal Colleges are relatively new to the state's educational system with the first college chartered in 1969. Nueta Hidatsa Sahnish College was established in in 1973. In addition to educational opportunities for students, NHSC has an economic impact on the state and local community. Nueta Hidatsa Sahnish College makes expenditures for goods and services purchased in the state, hires employees to staff their institutions, and constructs campus buildings to deliver post-secondary cultural-based education. The purpose of this study is to estimate the economic impact of NHSC's operations and student's expenditures have on the North Dakota economy. The combined economic effects of the five Tribal Colleges are reported in Coon et al. 2017a, while this report will focus on the economic impacts of NHSC. Consistent with previous studies, an economic impact analysis will be completed for each of the other four Tribal Colleges and presented in separate reports (Coon et al. 2017b, Coon et al. 2017c, Coon et al. 2017d, Coon et al. 2017e). Methods, analysis, and format are consistent for each of the five colleges and previous assessments of the colleges' economic effects. Methods and analysis are also consistent with an assessment of the economic contribution of the North Dakota University System. This analysis will parallel studies conducted for the North Dakota University System.

An economic impact assessment of the North Dakota Association of Tribal Colleges was previously completed in 2012 (Coon et al. 2013). This study will update the previous study and estimate the economic impact of NHSC operations in FY2016 and student spending during the 2015-2016 academic year using similar analytic method as previous studies. Prior to the 2012 study, the impacts of Tribal Colleges were examined individually; Cankdeska Cikana Community College for FY2008 (Leistriz and Bangsund 2008), Sitting Bull College for FY2009 (Leistriz and Bangsund 2010), and United Tribes Technical College for FY2010 (Gipp et al. 2011). The North Dakota University System has sponsored several economic impact assessments beginning with Fiscal Year (FY) 1999 and 2004 (Leistriz and Coon 2005), FY2006 (Leistriz and Coon 2007), FY2008 (Leistriz and Coon 2009), FY2009 (Bangsund et al. 2010), FY2011 (Coon et al. 2012a), FY2012 and FY2013 (Coon et al. 2014), and FY2014 and FY2015 (Coon et al. 20017).

In addition to the economic impact analysis, this study will include an examination of the value of a college education. A comprehensive review of published literature summarizes the social and economic value of a college education. While data on the value of a college education is not specific to the North

---

\*The authors are, respectively, Research Specialist, Director, Center for Social Research, and Research Scientist, North Dakota State University, Fargo.

Dakota's Tribal Colleges, it illustrates the value of a college education in general. Published statistics and selected research findings highlight the social and economic value of a post-secondary education. Also contained with this report is background information about the NHSC including a history of the school, campus location, academic areas of study, degrees granted, and the mission of the college.

### **Background of Nueta Hidatsa Sahnish College**

Nueta Hidatsa Sahnish College (formally named Fort Berthold Community College) was founded by the Three Affiliated Tribes of the Fort Berthold Reservation at New Town, ND. The first classes were offered in 1973 and were on an extension basis with coordinating institutions. Cooperating colleges were University of Mary, Minot State, and the University of North Dakota-Williston. NHSC added academic programs and was granted accreditation in 2006 by the Higher Learning Commission. NHSC was one of the 29 Tribal colleges that was designated as a "1994 Tribal Land Grant College". The mission statement for the college states that the Nueta Hidatsa Sahnish College will provide quality cultural, academic, and vocational education and services for the Mandan, Hidatsa, and Arikara Nation. NHSC offers cafeteria services for commuter students and a fitness center is located on campus. Student tutorial services are available to students that request academic assistance.

NHSC offers academic programs that grant Bachelor of Arts Degrees, Bachelor of Science Degrees, Associate of Arts Degrees, Associate of Science Degrees, Associate of Applied Science Degrees and Vocational Certificates of Completion. Bachelor of Science Degrees are available for Elementary Education, Elementary Education-Math, Elementary Education-Science, and Environmental Science. A Bachelor of Arts Degree is offered in Native American Studies. Seven Associate of Arts Degrees are offered for business administration/management, addictive studies, early childhood education, elementary education, human services, liberal arts, and Native American Studies. Four Associate of Science Degrees programs offered are for Environmental Science, Mathematics, Pre-Engineering, and Science. NHSC offers Associate of Applied Science Degrees in 5 fields of study and grants Vocational Certificates in 5 fields (Administrative Assistant, Child Development, Construction Technology, Welding Technology, and Marketing/Entrepreneurship). In the Fall Semester of the 2015-2016 academic year, NHSC had 182 full-time and 63 part-time students enrolled in classes, which equated 217 FTE students for the semester. If enrollment remained the same for the Spring Semester, a total of 434 FTE students would have attending NHSC during the 2015-2016 academic year. NHSC employed 80 full-time and 4 part-time workers in 2016.

### **Methods**

In-state expenditures for Nueta Hidatsa Sahnish College comprise the direct economic impacts, or first-round effects. Actual total in-state expenditures for NHSC operations were used to calculate direct effects. A brief questionnaire requesting expenditures for various expenditure categories was distributed to each of the tribal colleges. Each of the colleges completed the questionnaire providing estimates for in-state expenditures for operations expenses such as wages and salaries, benefits, construction, utilities, repairs and maintenance, etc. Data collection efforts for this assessment resulted resulting in a complete and consistent data set. In-state expenditures were allocated to industrial categories, or sectors, defined by the North Dakota Input-Output Model (Coon et al. 2012b). Expenditures included both outlays for capital improvements and general campus operations. Impacts can vary year to year based on the level of capital improvements in any given year.

The North Dakota Input-Output Model was used to estimate the secondary economic impacts based on Nueta Hidatsa Sahnish College expenditure data. The North Dakota Input-Output Model consists of interdependence coefficients, or multipliers, that measure the level of business activity generated in each economic sector from an additional dollar of expenditures in a given sector. A sector is a group of similar economic units, (e.g., firms engaged in retail trade make up the *Retail Trade* Sector). For a complete description of the input-output model, see Coon et al. (1989). The model estimates the changes in total business activity (gross receipts) for all sectors of the area economy resulting from the direct expenditures associated with each of the five Tribal Colleges. Increased business volumes were used to estimate secondary employment and estimates of tax revenues were based on historic relationships. Methods and procedures for this analysis are similar to those used in estimating the impact of other facilities and activities in the state (Leistritz 1995; Bangsund and Leistritz 2004). The North Dakota Input-Output Model was previously used to estimate the economic impacts for the Tribal Colleges in 2012 (Coon et al. 2012a) and for several assessments of the North Dakota University System (Coon et al. 2014). Empirical testing has confirmed the model's accuracy in estimating changes in levels of economic activity in North Dakota. Over the period 1958-2014, estimates of statewide personal income derived from the model averaged within 8 percent of comparable values reported by the U.S. Department of Commerce (Coon et al. 2016), Bureau of Economic Analysis 2016).

In addition to impacts associated with NHSC operations expenditures, the economic effects associated with student expenditures were estimated. Previous assessments used secondary data based from the North Dakota Career Resource Network to estimate expenditures for room and board. Representatives of the tribal colleges believe that tribal college students have different characteristics than students at non-tribal institution and that secondary data used previously may not adequately represent tribal college student's expenditures. For example, many tribal college student do not live on-campus, are older or have dependents. Accordingly, in order to more accurately estimate tribal college student expenditures, financial aid cost of attendance budgets from each tribal college were used to estimate student expenditures. The direct and total economic impact of student spending was estimated separately from the impacts associated with United Tribes Technical operations.

Each college had several cost of attendance budgets based on student characteristics, for example dependent student (those that still live at home), independent students (are financially independent) or students with dependents (with children). Financial aid application data was used to determine how many students were in each of the cost of attendance budget categories. Student enrollment and enrollment status (i.e., full-time,  $\frac{3}{4}$ -time,  $\frac{1}{2}$ -time, or  $\frac{1}{4}$ -time) were provided by NHSC and converted to FTE students based on credit hours. Student spending was based enrollment for the fall semester of the 2015-2016 academic year, and doubled to estimate expenditures for the 2015-2016 academic year. FTE students for the 2015-2016 academic year were multiplied by the estimated student living expenses based on the various cost of attendance budgets to obtain total student spending. Student spending for personal items, recreation, books, supplies, and room and board represent direct or first round economic effects. Student spending for each enrollment type and category was summed to calculate total student expenditures. Outlays for tuition and fees were excluded from the estimate of student expenditures to prevent double counting. Economic effects of expenditures for tuition and fees were captured in the assessment of college operations.

## Results

Nueta Hidatsa Sahnish College’s expenditures to North Dakota entities for FY2016 totaled \$10.9 million (Table 1). Direct expenditures were the greatest in the *Households* Sector (e.g., wages and salaries), with direct expenditures of \$5.6 million followed by outlays to the *Retail* sector of \$1.4 million. When the North Dakota Input-Output Model coefficients (multipliers) were applied to the direct impacts, secondary impacts were estimated to be \$21.1 million in FY2016. Total (direct plus secondary) economic impacts totaled \$32.0 million in FY2016. Total economic impact for the NHSC would generate business activity in the *Households* Sector (personal income) of \$12.7 million and retail sales of \$8.1 million.

Nueta Hidatsa Sahnish College employed 80 full-time and 4 part-time workers. Levels of business activity resulting from NHSC’s spending would support an additional 73 FTE secondary (indirect and induced) jobs in various sectors of the local and state economy. These levels of economic activity would be expected to generate sales and use tax revenues of \$377,000, personal income taxes of \$190,000, and corporate income taxes of \$54,000. In FY2016, Nueta Hidatsa Sahnish College had a measurable impact on the local and state economies.

**Table 1. Direct, Secondary, and Total Economic Impacts for Nueta Hidatsa Sahnish Colleges’ Operations, FY2016**

Sector	Direct	Secondary	Total
	-----\$000-----		
Construction	1,169	801	1,970
Transportation	253	109	362
Communications & Public Utilities	182	1,054	1,236
Retail Trade	1,471	6,675	8,146
Finance, Insurance, Real Estate	857	1,478	2,335
Business & Personal Services	498	551	1,049
Professional & Social Services	875	847	1,722
Households	5,624	7,056	12,680
Other <sup>1</sup>	--	<u>2,510</u>	<u>2,510</u>
Total	10,929	21,081	32,010

<sup>1</sup>Other includes agriculture, mining, manufacturing, and government.

## Student Economic Impact

Fall enrollment for the 2015-2016 academic year was 182 full-time and 63 part-time students. Enrollment was assumed to be the same for the spring term resulting in 434 FTE students enrolled at Nueta Hidatsa Sahnish College for the 2015-2016 academic year. Most student expenditures (e.g., books, supplies, and room and board) likely were made in the community that is home to the college. While some student expenditures may occur in cities and trade areas other than those where the college is located, it was assumed all student spending was in the local community where the college is located.

Based on expenditures per FTE student, students were estimated to have spent \$2.6 million in North Dakota on books, room and board, personal items, and recreation. As detailed in the methods section expenditures for fees and tuition were not included in the estimate of student expenditures to prevent double counting. Expenditures for tuition and fees were captured in the assessment of college operations.

Average expenditures were \$5,958 per FTE student for the 2015-2016 academic which was slightly higher than the average for all expenditures by all students at the five Tribal Colleges for the 2015-2016 academic year. Average expenditure for all tribal college student at all five institutions was \$5,417. Student expenditures at NHSC were 23.7 percent of the college's outlays, compared to 25.4 percent for all of the Tribal Colleges and the 26.5 percent for the North Dakota University System (Coon et al. 2012a).

Student spending at the Tribal Colleges was allocated to two sectors of the North Dakota Input-Output Model: *Retail Trade Sector* (75 percent), and *Finance, Insurance, Real Estate Sector* (25 percent). Direct economic impact of student spending of \$2.58 million for academic year 2015-2016 was allocated to the *Retail Trade Sector* (\$1,940,000) and the *Finance, Insurance, and Real Estate Sector* (\$646,504). Applying these expenditures to the North Dakota Input-Output Model produced an estimate of the total (direct and secondary) economic impact. Secondary economic impacts resulting from student spending totaled \$3.8 million, resulting in a total economic impact of \$6.4 million for academic year 2015-2016 (Table 2). The largest impacts were in the *Retail Trade Sector* with \$2.9 million in retail trade activity and *Households Sector* (economy-wide personal income) with total impacts of \$1.6 million. The total level of retail trade activity generated by student spending would be expected to generate \$135,000 in sales tax revenues, assuming all purchases were made in the North Dakota economy. Household expenditures would be expected to generate \$23,000 in personal income tax. Business activity from student spending would support (12) secondary (indirect and induced) jobs in the state.

Data limitations associated with student expenditures for NHSC were minimal. Issues related to expenditures for room and board were straight forward. Purchases for books and educational materials present some minor limitation. Books and educational materials are likely largely purchased at campus-sponsored bookstores and accordingly would be captured in the assessment of the college's operation. Further, it is likely that most textbooks and educational material would be purchased from publishing entities outside of North Dakota, and accordingly would not represent in-state expenditures by the colleges. Purchases for books and educational material at off-campus entities would represent an in-state expenditure. Data was not available to suggest to what degree student's purchase books and educational



material from on-campus or off-campus entities. To maintain consistency with previous analyses, the cost of books and educational materials was included in the student spending analysis (Coon et. al. 2012a). Although the potential for some double counting of spending for books and educational materials does exist, the effect on the total would be relatively small. Student expenditures for books and educational materials was \$350 per semester.

**Table 2. Direct, Secondary, and Total Economic Impacts for Nueta Hidatsa Sahnish College Student Spending, Academic Year 2015-2016**

Sector	Direct	Secondary	Total
	-----\$000-----		
Construction	--	115	115
Communication & Public Utilities	--	188	188
Retail Trade	1,940	967	2,907
Finance, Insurance, Real Estate	646	204	850
Business & Personal Services	--	87	87
Professional & Social Services	--	106	106
Households	--	1,559	1,559
Other <sup>1</sup>	--	613	613
Total	2,586	3,839	6,425

<sup>1</sup>Other includes agriculture, mining, transportation, manufacturing, and government.

### Value of a College Education

A college education has both social and economic benefits. A review of published literature illustrates the range of benefits associated with college degree. While the monetary value of higher education has been studied extensively, social benefits have been more difficult to quantify. While an analysis of the value of a college education for graduates of the NHSC was beyond the scope of this study, a review of published findings on the value of a college education will provide insight into how a college education can benefit both students and communities.

One obvious advantage of a college degree is better wages, but benefits extend beyond increased salaries. Adults with a college degree are healthier, more active citizens, and are more likely to read to their children than those without a college degree (Kyle 2010). College graduates are 14 percent less likely to be obese than high school grads and nearly twice as likely to exercise vigorously. Only 9 percent of college graduates smoke compared to 27 percent with a high school diploma. A higher percentage of college-educated parents (68 percent) read to their children daily than do high school

graduates (27 percent) (Kyle 2010) and people with a college degree donate their time to community organizations at a higher rate than any other group. Rawley and Hurtado (2002) contend that benefits of a college degree are also passed along to succeeding generations. Additionally, “college attendance has been shown to decrease prejudice, enhance knowledge of world affairs, and enhance social status while increasing economic and job security” (Rawley and Hurtado, 2002).

The Alliance for Excellent Education (2012) published a report stressing the importance of providing a quality education to all children, regardless of race or socioeconomic status. This report states that in order to maintain the United States economic strength, it is imperative to provide all students with a quality education. In addition to the economic benefits individuals receive from increased education, communities, states, and the nation also benefit. For example, if the 2011 high school graduation rate would have been 90 percent, and additional 750,000 students would have earned a diploma which would have resulted in an additional \$9 billion earned each year and increased tax collection of \$2 billion per year at the federal, state, and local levels (Balfanz et al. 2012). Although the study did not report statistics specifically for Native American students, it stated that 31 percent of whites aged twenty-five and older held a Bachelor’s degree in 2011, compared to just 20 percent for blacks and 14 percent for Hispanics (Alliance for Excellent Education 2012).

The Alliance for Excellent Education (2012) study concluded that improving education levels in the United States could save tens of billions of taxpayer dollars annually on social costs, such as health care, unemployment, and incarceration. Improving education for traditionally underserved and under-represented groups is a major factor in breaking the cycle of poverty and disenfranchisement. Low education levels are closely associated with increased rates of homelessness, teen pregnancy, and community violence.

Research by Hardy (2010) compiled seven benefits associated with higher education. Benefits were categorized as either economic or social. Economic benefits include: higher earnings potential, employer-provided health care coverage, and job stability. Social benefits were lower stress, healthier lifestyle choices, job satisfaction, and future children benefits. Job satisfaction is a benefit that might be overlooked, but because people spend most of their lives working, how they feel about their work can greatly affect them. Salient observations regarding future children benefits included correlation between mother’s education and the health of her children. Child mortality rates decreased as the mother’s education attainment levels increased, and parents with a higher education had higher expectations for their children to earn a college degree. Also, parents with college degrees were more likely to pay for their children’s college education. In a report released by Cankdeska Cikana Community College (2010) the social benefits particular to Native American Reservations were listed as mitigation of social problems; centers for preservation of culture; language and traditions; provision for further educational opportunities; technology transfer; and community programs.

Numerous studies have examined the earnings advantage for a college graduate compared to a high school graduate. However, the lifetime earnings advantage for a college degree varies by study. Lifetime earnings advantage ranged from a low of \$150,000 (Robinson 2010), to a middle range of \$650,000 (Pew Research Center 2011), with the highest of \$1,000,000 (Longley 2010). The wide range of values for a college degree were due to assumptions regarding unemployment and underemployment. Robinson (2010) assumes that 29 percent of college graduates are underemployed (i.e., working at high school-level jobs). Current national unemployment rates remain in the 5 percent range, and many college

graduates may be underemployed based on the level of education. However, these workers will move into jobs in their career field as they become available. Robinson (2010) also acknowledged that the value of a college education could range from \$150,000 to \$500,000 over the course of a lifetime. An estimated \$1 million earnings advantage for a college degree was the highest reported. People with less than a high school degree are at a distinct disadvantage to those with high school or college degrees. The unemployment rate for individuals with less than a high school diploma was 8.0 percent compared to 2.8 percent for college graduates in 2011 (Figure 1).

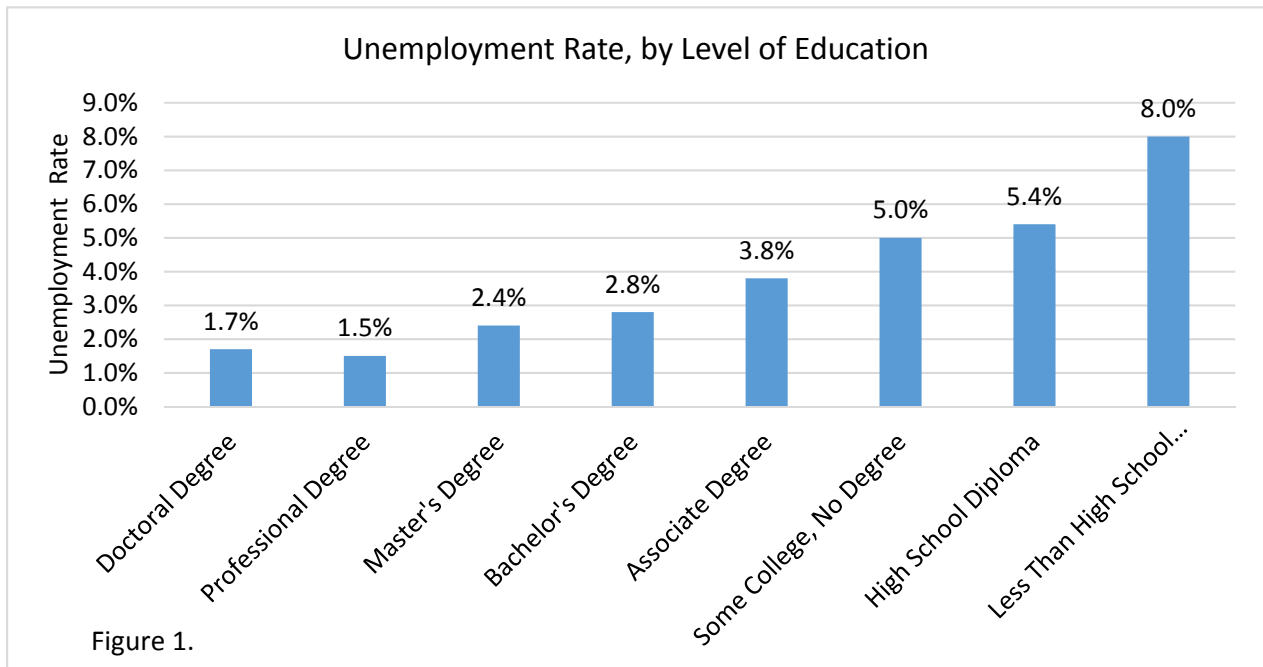


Figure 1. Unemployment Rate by Level of Education in the United States, 2015.  
Source: U.S. Bureau of Labor Statistics 2015.

Adults with a high school degree received mean annual earnings that are about 60 percent of those with a bachelor's degree (Figure 2). Bachelor's degree holders mean annual earnings were \$59,124 compared to \$35,256 for a high school degree (Bureau of Labor Statistics, 2012). Baum and Ma 2007 completed a comprehensive assessment on the value of higher education and analyzed income earning potential by level of education, race/ethnicity, and gender. This study developed rates of lifetime earnings for all educational levels compared to a high school degree baseline (i.e., a high school degree had a value of 1.00).

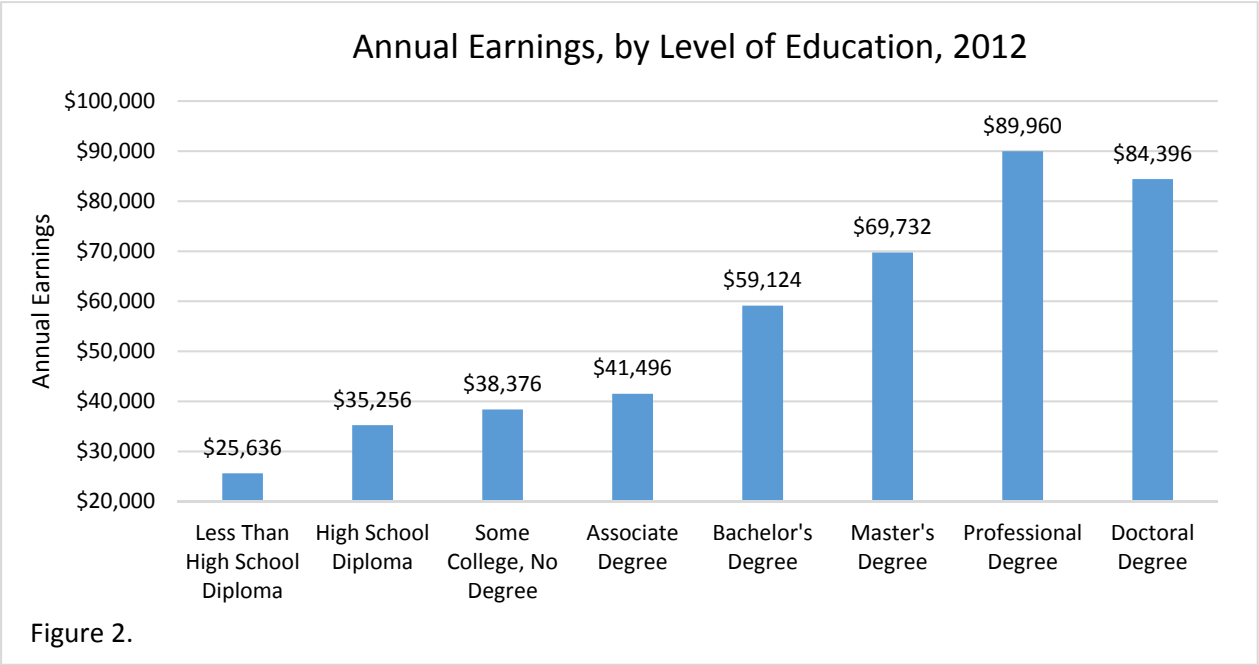


Figure 2. Median Annual Earnings of Adults Age 25 and Older, Full-time Workers in the United States, 2015  
 Source: U.S. Bureau of Labor Statistics 2012.

Figure 3 presents the earnings ratio for various levels of education. A bachelor's degree has an earnings ratio of 1.61, meaning that lifetime earnings of a college graduate will be 61 percent more than a high school graduate (Baum and Ma 2007). Lifetime earnings for those with an associate degree were 28 percent higher than earnings for those with a high school diploma. A non-high school graduate will earn 25 percent less than a high school graduate over their working lives. Post-baccalaureate degrees returned even higher lifetime earnings.

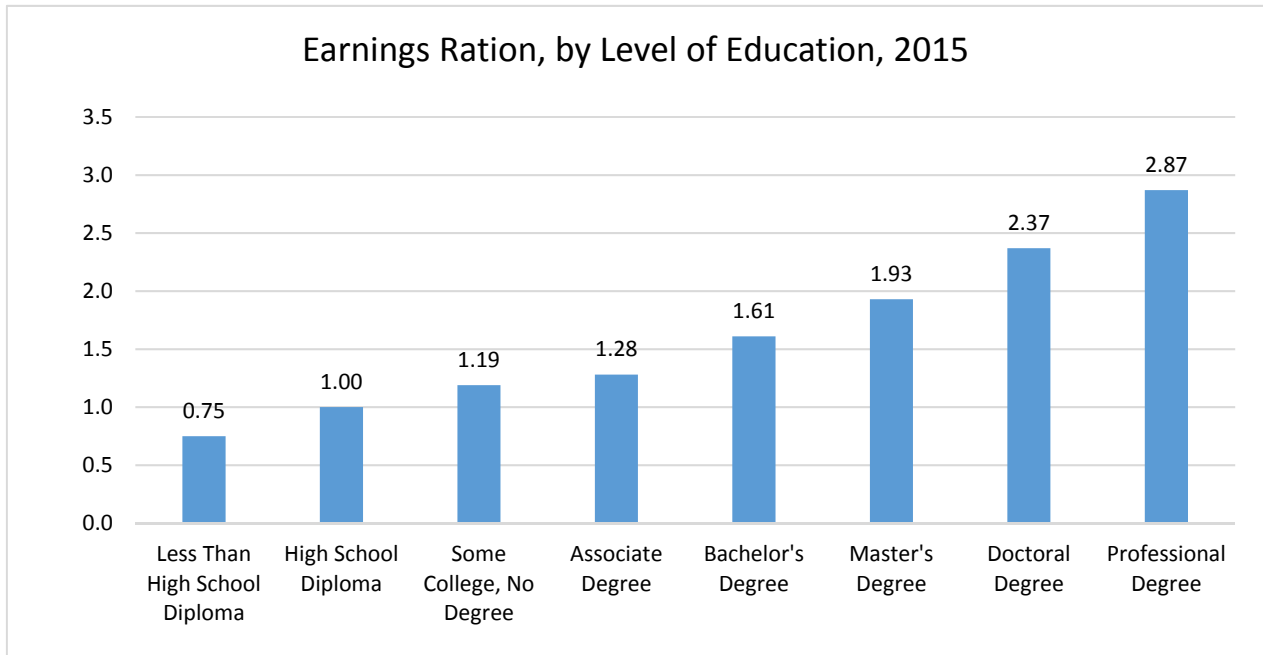


Figure 3. Ratio of Expected Lifetime Earnings Relative to High School Graduates in the United States, by Education Level, 2005.  
Source: Baum and Ma 2007.

Baum et al. (2010) also analyzed the income disparity over time for Bachelor's and Master's degree holders. In 1973, a Bachelor's degree (16 years of education) holder would earn a 10 percent higher mean wage than someone with a high school diploma. This advantage increased to 13 percent in 1989 and to 16 percent in 2007 (Figure 4). A Master's degree (18 years of education) holder would earn more than someone with a high school diploma, with a median wage higher by 12 percent in 1973, 15 percent higher in 1989, and 19 percent higher in 2007.

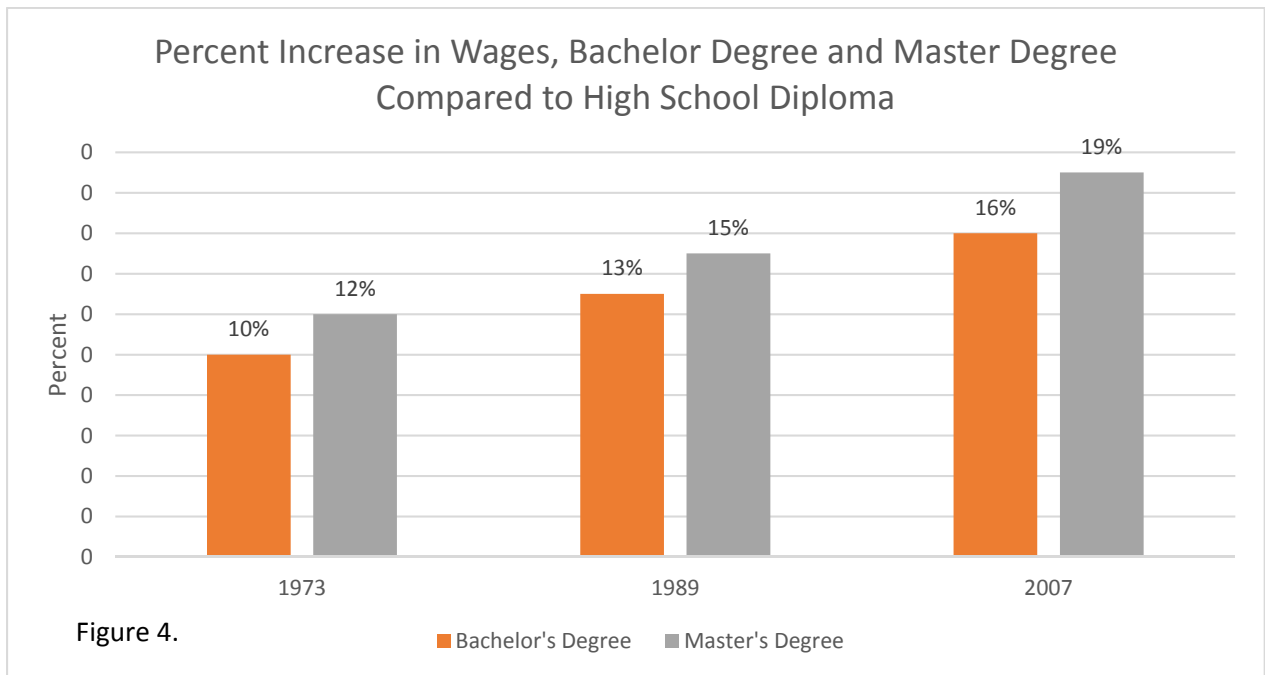


Figure 4. Percent Average Increase in Wages for Bachelor’s Degree or Master’s Degree Compared to High School Diploma, 1973, 1989, and 2007.

Source: Baum et al. 2010.

Zaback et al. (2012) also developed earnings ratios for education levels relative to a high school degree and developed the ratios for different academic areas (i.e., arts and humanities, business) and for each state. This analysis also found that a college degree results in a higher median income, even though the variation across states and disciplines is substantial. Almost without exception, each successive level of higher education attainment results in additional economic benefits. Clearly, education achievement at every level is associated with greater lifetime earnings.

Despite well document benefits of higher educational attainment, educational attainment is lower on Native American reservations than North Dakota state averages (U.S. Census, 2015). Statewide 4 percent of the state’s population age 25 or older highest educational attainment is “9<sup>th</sup> to 12<sup>th</sup> grade with not diploma”. On the Fort Berthold Native American Reservation, 6 percent of the population age 25 and older highest educational attainment is “9<sup>th</sup> to 12 grade with no diploma”, reflective of higher high school dropout rates (Figure 6). Attainment is the same for a high school diploma with 23 percent of the population of the state and Fort Berthold that have a high school diploma (Figure 7). Statewide 20 percent of the population 25 years and older has a bachelor’s degree compared to 14 percent at Fort Berthold. Nationally, in 2015, 42.3 percent of the population 25 years and older had a two-year degree, and 32.5 percent had a four-year college degree (Ryan and Baum 2016). Women were slightly more likely to be college-educated than men, with 32.7 percent having at least a bachelor’s degree compared to 32.3 percent for men (Ryan and Baum 2016). Across nearly every level of education, attainment is lower on the Fort Berthold Native American Reservation than statewide.

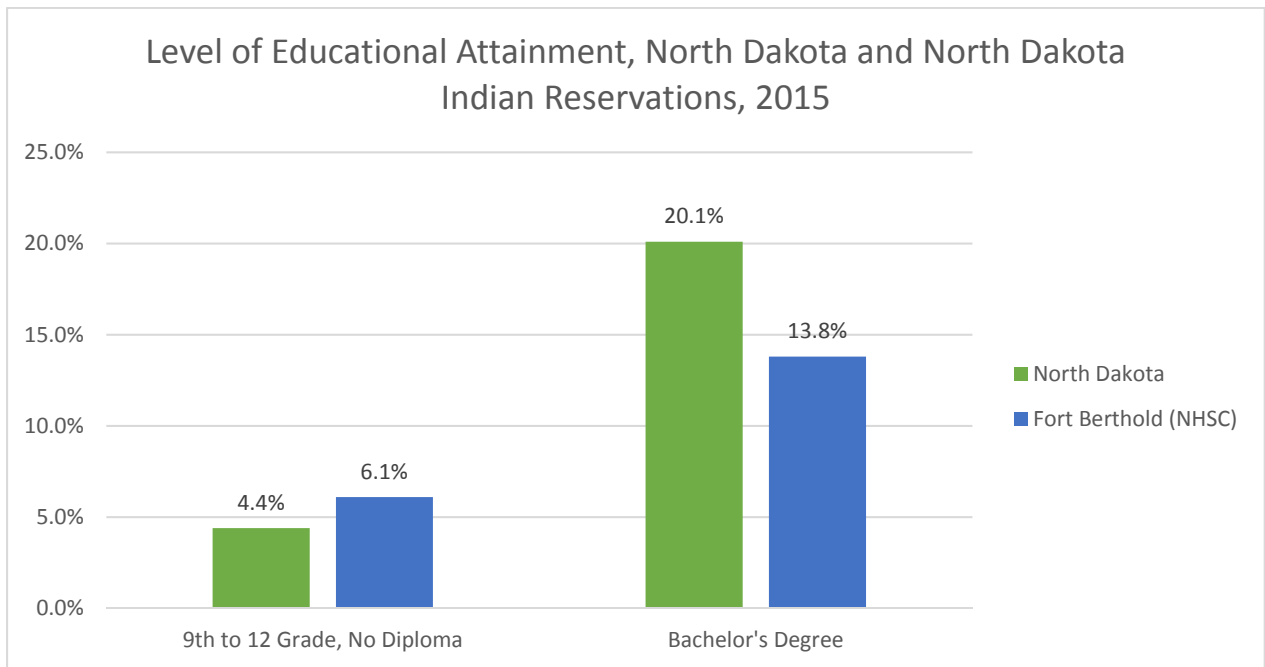


Figure 5. Level of Educational Attainment, North Dakota and Fort Berthold Indian Reservation  
Source: 2011-2015 U.S. Census American Community Survey, 2015

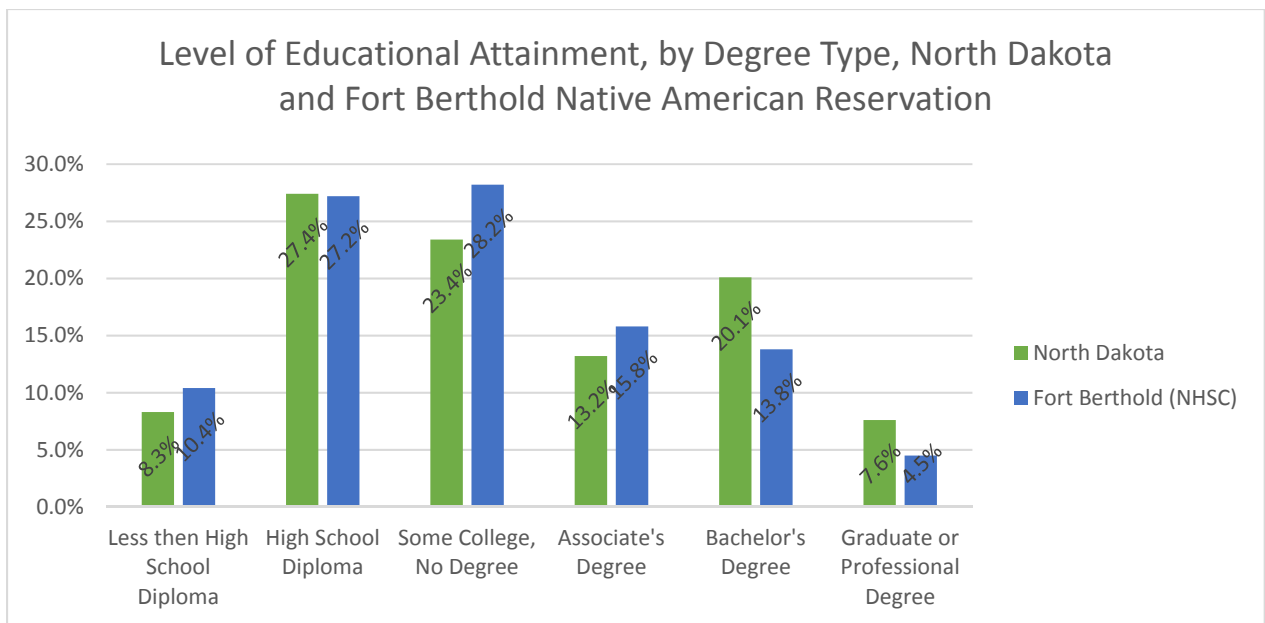


Figure 6. Level of Educational Attainment, by Degree Type, North Dakota and Fort Berthold Indian Reservations, 2015  
Source: 2011-2015 U.S. Census American Community Survey, 2015

High school graduation rates are lower on Native American reservation as well. High school graduation rates for all Native American in 2014-2015 was 60 percent compared to statewide graduation rates of 87

percent (Figure 7) (North Dakota Department of Public Instruction, 2015). Dropout rates for Native American students statewide 34 percent compared to 10 percent statewide for all students. Graduation rates at the New Town school district in 2014-15 was 50 percent and the dropout rate for Native American students was 42 percent (Figure 7) (ND Department of Public Instruction, 2015).

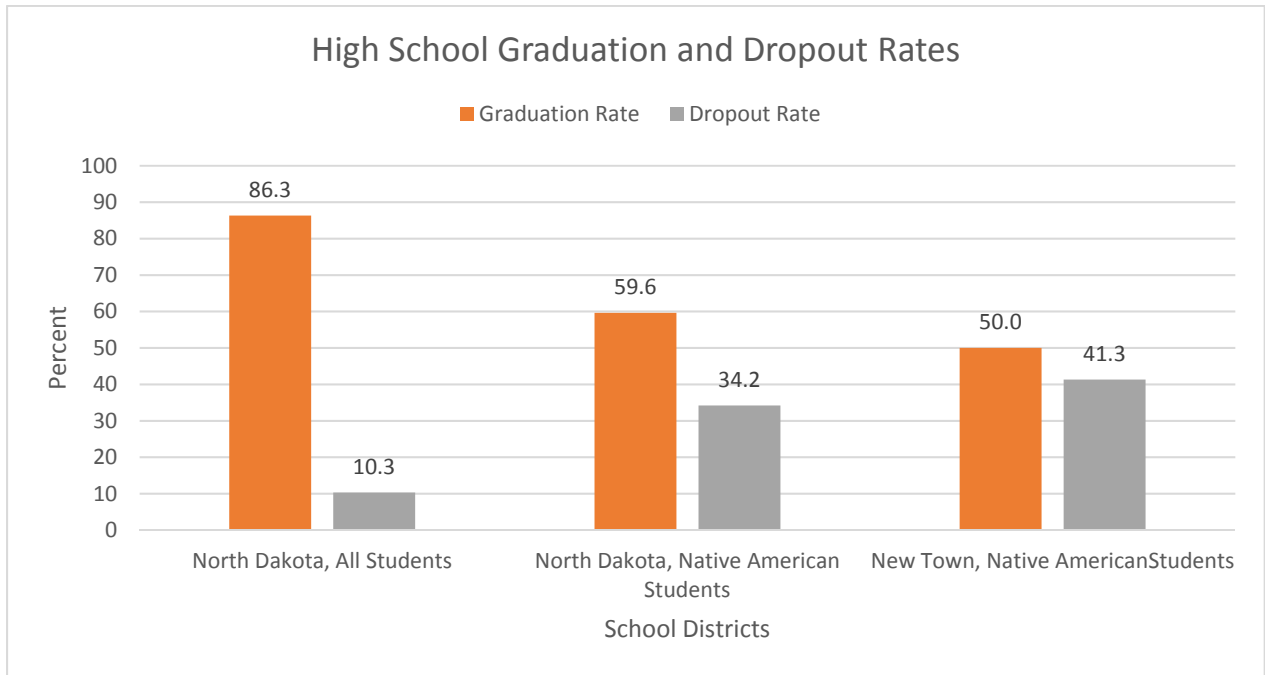


Figure 7. Graduation and Dropout Rates, North Dakota and New Town School District, 2014-2015  
Source: North Dakota Department of Public Instruction

The social and economic benefits that result from educational attainment are well documented. Higher education results in increased earnings and improved social conditions. Improved economic and social conditions from post-secondary education enhance quality of life and the social and economic benefits of a college education are passed onto subsequent generations. While the value of a post-secondary degree specific to NHSC were beyond the scope of this study, published research and statistics clearly illustrate positive social and economic benefits of higher education. The Tribal Colleges and NHSC serves an important role in improving economic and social conditions on Native American Reservations and communities in North Dakota through the delivery of post-secondary higher education.

### Conclusions

The North Dakota Association of Tribal Colleges (NDATC) consists of five colleges located in North Dakota. One of those five colleges is the Nueta Hidatsa Sahnish College located in New Town, which serves Tribal members for the Mandan Hidatsa and Arikara Nation. In addition to providing cultural based education opportunities for Native Americans, tribal colleges have an economic impact as a result of college operations and spending for goods and services and wages and salaries. Student spending also contributes to the economic effects related to the Tribal Colleges. In addition to economic impacts, the higher education opportunities provided by NHSC has both positive social and economic benefits.



Nueta Hidatsa Sahnish College direct expenditures into the North Dakota economy were \$10.9 million in FY2016. The college employed 80 full-time workers and 4 part-time workers. Total economic impact for NHSC was \$32.0 million in FY2016, which included \$21.1 million of secondary impacts. Business activity in the *Households* Sector, which measures economy-wide personal income, was estimated to be \$12.7 million in FY2016. Considering the largest expenditure category for the college was for wages and salaries this result was not unexpected. Retail trade activity attributed to NHSC's expenditures were estimated to be \$8.1 million in FY2016. Business activity generated by NHSC's expenditures would produce \$377,000 in sales and use taxes, and \$190,000 in personal income taxes. In addition to the 80 full-time and 4 part-time jobs at Nueta Hidatsa Sahnish Colleges, the level of business activity associated with college expenditures would support 73 secondary (indirect and induced) jobs.

Student expenditures for living expenses also have economic effects. Nine hundred eighty students (490 per semester) were enrolled on either a full-time or part-time basis during the 2015-2016 academic year. Expenditures by the 868 FTE (434 FTE per semester) students at Nueta Hidatsa Sahnish College for personal items, recreation, books, supplies, and room and board total \$2.6 million for the 2015-2016 academic year. Total economic impact (direct plus secondary) associated with student expenditures \$6.4 million; secondary effects totaled \$3.8 million. Impacts were the greatest in the *Retail Trade* Sector (\$2.9 million) due to the high percentage of student spending for retail trade items. The next highest level of business activity was in the *Households* Sector (economy-wide personal income) with \$1.6 million in direct impacts. This level of business activity generated would support 6 secondary jobs in various sectors of the North Dakota economy. Economic effects from student expenditures are in addition to those of Nueta Hidatsa Sahnish College operations.

In addition to local economic impacts, benefits accrue to individuals with higher academic achievement. Previous studies have reported that college graduates have, healthier life styles, healthier children, and increased job satisfaction, have shown decreased prejudice, enhanced knowledge of world affairs, and have enhanced social status. Many of these benefits are passed onto succeeding generations. Further college graduates have lower unemployment rates and higher annual incomes. The unemployment for high school graduates was 5.4 percent in 2015, much higher than the 2.8 percent rate for those with a college Bachelor's degree. Higher incomes are also associated with educational attainment. In 2015, the median annual earnings for a college degree was \$59,124, while the median for a high school degree was \$35,256, only 60 percent of earning associated with a Bachelor's degree.

Currently in North Dakota there is considerable education disparity between the Native American population and the state population overall. Educational attainment is lower on Native American reservation than North Dakota state averages. Across nearly every level of education, education attainment is lower on the Fort Berthold Native American Reservation. Published research and statistics clearly illustrate positive social and economic benefits of higher education. The Tribal Colleges and NHSC serves an important role in improving economic and social conditions for people and communities on North Dakota Native American Reservations and throughout North Dakota through the delivery of post-secondary higher education.

## References

- Alliance For Excellent Education. 2012. *Inseparable Imperatives: Equity in Education and the Future of the American Economy*. Internet Website. [www.all4ed.org/files/inseparableimperatives.pdf](http://www.all4ed.org/files/inseparableimperatives.pdf). Washington, D.C.
- Balfanz, Robert, John M. Bridgeland, Mary Bruce, and Joanna Hornig Fox. 2012. *Building a Grad Nation: Progress and Challenge in Ending the High School Dropout Epidemic*. Annual Update. A Report to AT&T and Pearson Foundation. Washington, D.C.: Civic Enterprises, Everyone Graduates Center at John Hopkins University, America's Promise Alliance, and Alliance for Excellent Education.
- Bangsund, Dean A., F. Larry Leistritz, and Randal C. Coon. 2010. *Economic Impact of the North Dakota University System in 2010*. AAEA Report No. 672. Fargo: North Dakota State University, Department of Agribusiness and Applied Economics.
- Bangsund, Dean A., and F. Larry Leistritz. 2004. *Economic Contributions of the Sugarbeet Industry to Minnesota, North Dakota, and Eastern Montana*. AAE Report No. 532. Fargo: North Dakota State University, Department of Agribusiness and Applied Economics.
- Baum, Sandy, Jennifer Ma, and Kathleen Payea. 2010. *Education Pays: The Benefits of Higher Education for Individuals and Society*. Trends in Higher Education Series. Trends College Board Internet Website. [www.trends.collegeboard.org](http://www.trends.collegeboard.org). New York, New York.
- Baum, Sandy and Jennifer Ma. 2007. *Education Pays: The Benefits of Higher Education for Individuals and Society*. Trends in Higher Education Series. Trends College Board Internet Website. [www.trends.collegeboard.org](http://www.trends.collegeboard.org). New York, New York.
- Bureau of Economic Analysis. 2016. *Personal Income by Major Sources and Earning by Industry*. Table SA05. Internet Website Interactive Tables. [www.bea.gov](http://www.bea.gov). Washington, D.C.: U.S. Department of Commerce.
- Cankdeska Cikana Community College. 2010. *2009 Economic Impact & Return on Investment Report: Our Story*. Fort Totten, ND: Spirit Lake Dakota Nation, Cankdeska Cikana Community College.
- Cankdeska Cikana Community College. 2012. *Cankdeska Cikana Community College History: College Namesake*. Cankdeska Cikana Community College Internet Website. [www.littlehoop.edu](http://www.littlehoop.edu). Fort Totten, ND.
- Coon, Randal C., Dean A. Bangsund, Nancy M. Hodur. 2017. *Economic Contribution of the North Dakota University System in 2015*. AAE Report No. 729. Fargo: North Dakota State University, Department of Agribusiness and Applied Economics.
- Coon, Randal C., Dean A. Bangsund, Nancy M. Hodur. 2017a. *Economic Contribution of North Dakota's Tribal Colleges in 2016*. AAE Report No. 760. Fargo: North Dakota State University, Department of Agribusiness and Applied Economics.

- Coon, Randal C., Dean A. Bangsund, Nancy M. Hodur. 2017b. *Economic Contribution of Nueta Hidatsa Sahnish College in 2016*. AAE Report No. 761. Fargo: North Dakota State University, Department of Agribusiness and Applied Economics.
- Coon, Randal C., Dean A. Bangsund, Nancy M. Hodur. 2017c. *Economic Contribution of Sitting Bull College in 2016*. AAE Report No. 762. Fargo: North Dakota State University, Department of Agribusiness and Applied Economics.
- Coon, Randal C., Dean A. Bangsund, Nancy M. Hodur. 2017d. *Economic Contribution of Turtle Mountain Community College in 2016*. AAE Report No. 763. Fargo: North Dakota State University, Department of Agribusiness and Applied Economics.
- Coon, Randal C., Dean A. Bangsund, Nancy M. Hodur. 2017e. *Economic Contribution of Candeska Cikana Community College in 2016*. AAE Report No. 761. Fargo: North Dakota State University, Department of Agribusiness and Applied Economics.
- Coon, Randal C., Dean A. Bangsund, Nancy M. Hodur. 2017. *Economic Contribution of North Dakota's Tribal Colleges in 2016*. AAE Report No. XXX. Fargo: North Dakota State University, Department of Agribusiness and Applied Economics.
- Coon, Randal C., Dean A. Bangsund, and Nancy M. Hodur. 2016. *North Dakota Input-Output Model Data Base*. Fargo: North Dakota State University, Department of Agribusiness and Applied Economics.
- Coon, Randal C., Dean A. Bangsund, Nancy M. Hodur. 2014. *Economic Impact of the North Dakota University System in 2013*. AAE Report No. 729. Fargo: North Dakota State University, Department of Agribusiness and Applied Economics.
- Coon, Randal C., Dean A. Bangsund, Nancy M. Hodur. 2013. *Economic Contribution of North Dakota's Tribal Colleges in 2012*. AAE Report No. 709. Fargo: North Dakota State University, Department of Agribusiness and Applied Economics.
- Coon, Randal C., Dean A. Bangsund, Nancy M. Hodur. 2012a. *Economic Impact of the North Dakota University System in 2011*. AAE Report No. 690. Fargo: North Dakota State University, Department of Agribusiness and Applied Economics.
- Coon, Randal C., Dean A. Bangsund, and Nancy M. Hodur. 2012b. *The Economic Base of North Dakota*. AAE Staff Paper 12002. Fargo: North Dakota State University, Department of Agribusiness and Applied Economics.
- Coon, Randal C., F. Larry Leistritz, Thor A. Hertsgaard, and Arlen G. Leholm. 1989. *The North Dakota Input-Output Model: A Tool for Analyzing Economic Linkages*. AE Report No. 187. Fargo: North Dakota State University, Department of Agricultural Economics.

- Gipp, David M., Tom Katus, and Michael Madden. 2011. *The Economic Impact of United Tribes Technical College on the Economy of the Bismarck/Mandan, ND Area*. Bismarck: United Tribes Technical College with the assistance of TK Associate International.
- Hardy, Marcelina. 2010. *7 Benefits of Earning a College Degree*. Yahoo! Education Internet Website. [www.education.yahoo.net/articles.yahoo!education](http://www.education.yahoo.net/articles.yahoo!education).
- Institute for Education Sciences. 2015. *Digest of Educational Statistics*. Table 203.70. Internet Website. [www.nces.ed.gov/ccd/data\\_tables.asp](http://www.nces.ed.gov/ccd/data_tables.asp). Washington, D.C.: National Center for Education Statistics.
- Kyle, Chris. 2010. *Education Pays 2010*. Yahoo! Education Internet Website. [www.education.yahoo.net/articles.yahoo!education](http://www.education.yahoo.net/articles.yahoo!education).
- Leistriz, F. Larry. 1995. *Potential Local Socioeconomic Impacts of the Proposed ProGold Processing Plant*. Agr. Econ. Rpt. No. 328. Fargo: North Dakota State University, Department of Agribusiness and Applied Economics.
- Leistriz, F. Larry, and Randal C. Coon. 2005. *Economic Impact of the North Dakota University System*. Fargo: North Dakota State University, Department of Agribusiness and Applied Economics.
- Leistriz, F. Larry, and Randal C. Coon. 2007. *Economic Impact of the North Dakota University System*. Fargo: North Dakota State University, Department of Agribusiness and Applied Economics.
- Leistriz, F. Larry, and Dean A. Bangsund. 2008. *Economic Impact of Cankdeska Cikana Community College*. Fargo: North Dakota State University, Department of Agribusiness and Applied Economics.
- Leistriz, F. Larry, and Dean A. Bangsund. 2010. *Economic Impact of Sitting Bull College on the Regional Economy*. AAE10002. Fargo: North Dakota State University, Department of Agribusiness and Applied Economics.
- Leistriz, F. Larry, and Randal C. Coon. 2009. *Economic Impact of the North Dakota University System*. Fargo: North Dakota State University, Department of Agribusiness and Applied Economics.
- Longly, Robert. 2010. *Lifetime Earnings Soar with Education*. About.Com Internet Website. [www.usgovinfo.about.com](http://www.usgovinfo.about.com). Washington, D.C.: About.Com, US Government Info.
- North Dakota Department of Public Instruction. 2015. *North Dakota Cohort Graduation and Dropout Rates for School Year 2014-2015*. Internet Website. [www.nd.gov/dpi/data/graduate](http://www.nd.gov/dpi/data/graduate). Bismarck: North Dakota Department of Public Instruction.
- Northwest Area Foundation. 2006. *North Dakota Educational Attainment*. Northwest Area Foundation Indicators Website. [www.indicators.nwaf.org](http://www.indicators.nwaf.org). St.Paul, Minnesota.

- Pew Research Center. 2011. *\$650,000 - The Monetary Value & College Education*. Pew Research Center Internet Website. [www.pewresearch.org](http://www.pewresearch.org). Washington, D.C.: Pew Research Center.
- Rawley, L. And S. Hurtado. 2002. *The Non-monetary Benefits of an Undergraduate Education*. Ann Arbor: University of Michigan, Center for Study of Higher and Post-secondary Education.
- Robinson, Jenna. 2010. *Lifetime Earnings: Bachelor's Degree vs. High School Graduate*. Intellectual Takeout Internet Website. [www.intellectualltakeout.org](http://www.intellectualltakeout.org). Raleigh, N.C.: The John William Pope Center for Higher Education Policy.
- Ryan, Camille J., and Kurt Bauman. 2016. *Educational Attainment in the United States: 2015*. P20-578. Washington, D.C.: U.S. Census Bureau, Department of Commerce, Economics and Statistics Administration.
- U.S. Bureau of Labor Statistics. 2015. *Employment Projections: Earnings and Unemployment Rates by Educational Attainment*. Internet Website. [www.bls.gov/emp/ep\\_chart\\_001.htm](http://www.bls.gov/emp/ep_chart_001.htm). Washington, D.C.: U.S. Bureau of Labor Statistics, Office of Occupational Statistics and Employment Projections.
- U.S. Bureau of Census. 2015. *American Community Survey*. Bureau of Census Factfinder Website. [www.factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml](http://www.factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml). Washington, D.C.: U.S. Department of Commerce, U.S. Census Bureau.
- U.S. Bureau of Census. 2015a. *American Community Survey*, Bureau of Census Factfinder, [https://factfinder.census.gov/bkmk/table/1.0/en/ACS/15\\_5YR/S1501/0400000US38|0400000US38.25000P|2500000US1160|2500000US1860|2500000US3935|2500000US3970|2500000US4345](https://factfinder.census.gov/bkmk/table/1.0/en/ACS/15_5YR/S1501/0400000US38|0400000US38.25000P|2500000US1160|2500000US1860|2500000US3935|2500000US3970|2500000US4345). Washington, D.C., U.S. Department of Commerce, U.S. Census Bureau.
- Zaback, Katie, Andy Carlson, and Matt Crellin. 2012. *The Economic Benefit of Post Secondary Degree: A State and National Level Analysis*. Internet Website. [www.live.sheeo.gotpantheon.com](http://www.live.sheeo.gotpantheon.com). Boulder, Colorado: State Higher Education Executive Officers and National Center for Higher Education Management Systems.









