Touch The Sky

A Guide for Tribal and Community College Transfer Students

By Rebecca L. Robbins, Ph.D.
Standing Rock Sioux

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THIS HANDBOOK is dedicated to my parents, Guy and Arlene Robbins, who taught me to reach for my dreams and touch the sky! Pilameya!

The Light is Within Me As Us All.

We are the leaders we all have been looking for.
Ever rising as the sons and daughters of tomorrow's longing for a better day and a better way
Wading in the confluence of ancient rivers with generations past, present and yet unborn
Standing on the shoulders of those now gone who struggled against much worst with much less
Ever giving thanks for their legacy and pumping up positive expectancies-
the fertile breeding ground for miracles
Day by day, preaching a better sermon with our lives than our lips
Walking with arrogant humility and the energizing power of things believed but not yet seen
Knowing to whom much is given much is expected
Manifesting and modeling right walks and resolute will
Against the wall... At the edge... Yet ever pressing forward
Relentlessly affirming the positive and interrupting the negative!
Embracing every experience as a blessing or a lesson
that also can be transformed into a blessing
Lifting as we climb while
Igniting the vision and potential of new generations
Lighting the future for those yet unborn
Keeping our eyes on the prize
Still and always we rise
In spite of... if not because of...
Guided towards our greatest and highest good
Letting nothing and noone steal our joy
WE RISE!
Ashe

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PREFACE

Touch the Sky is written for you. Touch the Sky is a publication for the All Nation's Alliance for Minority Participation (AMP) project. The All Nations AMP program is funded by the National Science Foundation and seeks to increase the numbers of Native students who earn baccalaureate and graduate degrees in science, mathematics, engineering, and technology (SMET). Specific objectives of the All Nations AMP program are to:

* Double the number of American Indians enrolled in SMET programs at tribal colleges and four-year SMET degree-granting institutions;
* Double the number of American Indian graduates with baccalaureate degrees in SMET; and
* Double the number of American Indians enrolling in graduate programs at SMET institutions.

The All Nations AMP project recognizes the importance of making the transition from tribal colleges to four-year and graduate institutions of higher education. Touch the Sky is designed to make that transition easier. This publication looks at all aspects of the transition process and focuses on the importance of mentors and tutors for Native students in the fields of science, mathematics, engineering, and technology. A variety of campus resources like career and student service centers on four-year campuses are discussed.

The All Nations AMP project is administered by the Salish Kootenai College in Pablo, Montana. All Nations AMP is under the direction of a governing board representing American Indian Higher Education Consortium (AIHEC) member tribal colleges and four-year science, engineering, and mathematics degree-granting institutions from each of nine participating states.

Currently, 57 institutions are participating in the Alliance-25 tribal colleges, 18 four-year institutions, and 14 affiliate institutions not currently graduating American Indian SMET majors. The major focus of the program is to strengthen the transition between tribal college association and transfer SMET programs with baccalaureate SMET programs and graduate SMET programs.

ACKNOWLEGEMENTS AND STATEMENT OF SUPPORT

The final publication of Touch the Sky represents the voices of many. I'd like to acknowledge and thank the entire staff of the All Nations Alliance for Minority Participation (All Nations AMP) at the Salish Kootenai College. My special thanks to Dr. Judy Gobert (program manager), Jaymee Bick (bridge coordinator), and Lisa Avery (student intern) for providing resource materials and timely feedback for each draft of the handbook.

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No publication is without technical advisors. Here, I'd like to acknowledge Dr. Mary E. McAfee (Colorado State University) for her thoughtful suggestions on the manuscript. Drs. John Tippeconnic (Pennsylvania State University) and Wayne Stein (Montana State University at Bozeman) must also be recognized for their interest and commitment to tribal college students and the quality of the final product.

Student scenarios in the pages that follow are inspired by the many tribal and community college students who are pursuing their dreams-without you, we wouldn't need a publication like "Touch the Sky"... Many thanks!

Listings of selected science, mathematics, engineering, and technology majors were reprinted by permission from The College Entrance Examination Board.

Touch the Sky was made possible through the generosity of the National Science Foundation in support of the All Nations Alliance for Minority Participation.

CHAPTER ONE

TOUCH THE SKY: WHAT'S IT ALL ABOUT?

Jaymee is a Tuscarora high school student who spends much of her time watching wild birds and is very interested in the conservation of natural resources. Her friends think Jaymee's a dreamer and that she's not serious enough to go on to college. But Jaymee has always dreamed of being an environmental consultant to non-Native corporations who seem to be "developing" her homeland without regard to what it does to the wildlife.

Jaymee's beliefs and interests compel her to talk with her high school counselor. She finds out that if she goes on to Bay Mills Community College, then on to Lake Superior State University and majors in wildlife management, she'll be qualified to be the environmental consultant she's always wanted to be. She finds, through her research of the major that her tribe is extremely interested in finding someone who can help them in preserving the beauty of the earth.

Welcome to the beginning of a wonderful adventure! Whether you're a high school student who's considering going to college, a "reentry" adult who has been in the workforce for a few years and wants to go on to college, or a community college student who's just decided that you'd like to work for your bachelor's degree, this publication is for you!

The purpose of this handbook is to acquaint you with the transfer process and to pinpoint potential problem areas before they take a toll on you. The handbook is directed at both high school and community college students. Each chapter includes tips on how not only to survive the transfer process, but on how to succeed in getting your baccalaureate degree from the four-year institution of your choice.

If-during your undergraduate coursework-you decide that graduate school is for you, this handbook should also help you in long-term planning for graduate school. Each chapter poses questions and answers to some of the most common concerns of transfer students and will expose you to university-level science, mathematics, engineering, and technology (SMET) studies, career opportunities, and academic success skills. The handbook can be used in courses dealing with transfer-or-as a ready reference material that you can carry with you. Where appropriate, chapters include activities and checklists for your use.

Undergraduate study in science and engineering is the topic of Chapter Two. Here, we take a brief look at tribal colleges and statistics relating to the state of American Indian involvement in science, mathematics, engineering, and technology. Factors associated with "making it" through a degree in one of these fields are listed.

Chapter Three deals with planning your transfer to the four-year university. Discussion in this chapter centers on helping you answer questions dealing with how to identify the college you'd like to transfer to and what high school courses you should take to be sure you're prepared to go into the major you want.

All credits are not created equal is the focus of Chapter Four. This very important chapter looks at how credits transfer. The chapter points out that just because you feel a certain course will be helpful to you and your career, those making the decisions may not see it that way. Tips on how to get the most out of your transfer credit are offered.

Chapter Five looks at the admissions process and provides you with a checklist of things that you must look at in order to assure enrollment in the institution you want and within the timeframe you want. This chapter also stresses the importance of understanding-and meeting-timelines set by the four-year institution.

Financial aid opportunities available through the tribes, tribal community colleges, professional organizations, and the government are discussed in Chapter Six. Tips on filling out the forms are provided. And, financial Aid Internet links are listed for those of you who have computers.

Chapter Seven explains the college entrance exams, the SAT I, SAT II, and the ACT and offers tips on how to prepare for them. Changes in the SAT exams are briefly mentioned. This chapter also provides tips on how to lessen the stress associated with taking exams like these.

The importance of campus climate, or environment, is examined in Chapter Eight. Institutional responsibility for creating positive climates on campus is also addressed. This chapter is designed to help you cope with the change from a small tribal college to a larger university.

Chapter Nine takes you to and through the registration process at the four-year institution. Tips are included to help you anticipate problem areas during the registration process before they occur.

Even silence is a form of communication, argues Chapter Ten. The importance of communication-written, oral, nonverbal, and intercultural-is examined here. Short exercises are included to help you.

Chapter Eleven looks at research-an overlooked, yet extremely important-component of the undergraduate experience. Tips on defining areas of research and carrying out the research are provided in this chapter.

The importance of establishing meaningful relationships with university faculty and staff is presented in Chapter Twelve. This chapter also suggests that you take your tribal college advisor along with you-if only in spirit-on your journey to and through the four-year institution.

Chapter Thirteen looks at the four-year institutional bureaucracy and tries to make sense of the "jungle." Campus resources that will help you are listed and tips on anticipating the potential problems in transfer are also examined.

The interrelationship between time management and study skills is the focus of Chapter Fourteen. Skills necessary to take advantage of employment opportunities are presented and discussed.

Chapter Fifteen takes a look at the clubs on and off campus and discusses social, educational, and scholarly support groups for you in your journey. The Internet is also examined as a medium for working with other students and professionals in your field for the development of leadership, mentoring, and research skills.

A selected listing of career options in the fields of science, mathematics, engineering, and technology is presented in Chapter Sixteen. The level of degrees-undergraduate and graduate-is addressed in relation to employment opportunities in these fields.

Chapter Seventeen stresses the importance of believing in yourself and your ability to get the job you want when you graduate. Tips on how to prepare for an interview and make the most out of it are presented.

The contents of this handbook are summarized in Chapter Eighteen. Information presented throughout the publication is pulled together with suggestions and recommendations regarding your upcoming adventure in higher education.

Finally, appendices are included at the end of this handbook that include a bibliography of resources (print and online) and a listing of the All Nation's Alliance for Minority Participation (All Nation's AMP) partner institutions.

Enjoy!

CHAPTER TWO

THE SKY'S THE LIMIT: UNDERGRADUATE STUDY IN SCIENCE AND ENGINEERING

If you're interested in answering questions about how things work and why things work the way they do, you will do well to major in science, mathematics, engineering, or technology. These fields require analytic reasoning and problem solving in both study and practice. But, to some of us, these fields seem scary and unattainable.

Stephanie (Blackfeet) was a high achiever in high school but thought a career in science was boring and probably out of her reach. She wanted to go to work for her tribe directly after graduation from high school. She'd always wanted to work in the area of environmental education where she could do her part in taking care of the Earth and, at the same time, inform others of the important role the environment plays in all our lives.

During her junior and senior years in high school, Stephanie found that she really enjoyed her studies in biology, chemistry, and physics and that her grades in these classes reflected that interest. During her last term in high school, Stephanie enrolled in pre-college mathematics, computer science, and geography. To her surprise these classes weren't really that difficult for her.

Stephanie found that her real interest was with meteorology and that she could accomplish her life-long goals as a television weather forecaster. She met with her high school counselor and found that Washington State University, a four-year institution near her home, offered a Bachelor of Science degree in meteorology. Equipped with her bachelor's degree, Stephanie is now a television weather forecaster. She is in the position to understand why nature acts the way she does and how to predict (sometimes with uncertainty) the upcoming event.

Stephanie's story isn't so unusual. It's true that the fields of science, mathematics, engineering, and technology are quite demanding fields. But it's equally true that these fields are interesting and important to contemporary tribal groups who are trying to maintain the delicate balance between nature and science. In order to understand what needs to be done to maintain this balance, we must know what exists. That is where the fields of science and engineering offer a foundation for growth and understanding.

Where do the tribal colleges come in?

Since the inception of the first tribal college in 1968, nearly 25,000 students have attended one of the 31 tribally controlled community col-

leges in 11 states and Canada. The colleges are one of the fastest growing segments of higher education with new tribal colleges being established all the time. Tribal colleges are administered by American Indian boards (sometimes the council is involved). Many of the tribally controlled community colleges belong to the American Indian Higher Education Consortium (AIHEC), which is an organization located just outside Washington, DC. In 1989, AIHEC established the American Indian College Fund to assist students in funding for higher education.

Tribal colleges serve many important functions. Among the most important are solid relationships that may develop between students and tribal college personnel-especially advisors and tutors. These relationships are especially important for transfer students because the transfer process can be a difficult and high-stress experience and tribal college advisors often serve as mentors both during the community college experience and onto the four-year transfer.

Tribal college students tend to go on to a four-year institution more often than other community college students do, possibly because of strong relationships built between students and their advisors. A 1997 Carnegie Foundation publication[1] cites a study conducted at Turtle Mountain College that finds 56 percent of graduates continued their education at a non-Indian college or university and, among this group, 32 percent had earned a four-year degree. The study noted that these figures exceed the transfer and graduation rates of community college students nationwide.

This Carnegie Report also finds that student satisfaction with tribal community colleges is higher than other community colleges surveyed. This may be due to the fact that tribal college advisors take an interest in students and illustrate that concern through in-depth, although less formal, mentoring and tutoring of Native students.

What is the current state of American Indians in science, mathematics, engineering, and technology?

Data collected by the National Science Foundation[2] finds that "the number of black, Hispanic and American Indian science and engineering graduate students has been increasing over the last several years. In 1995, the enrollment of blacks rose 4 percent, Hispanics, 6 percent, and American Indians, 10 percent. Enrollment of Asians decreased 2 percent."

The All Nation's Alliance for Minority Participation program, funded by the National Science Foundation, is devoted to doubling the number of Native students who graduate in the fields of science, mathematics, engineering, and technology by the year 1999. Since its inception in 1995,

the All Nation's AMP has assisted over 2,000 Native students in pursuing associate, baccalaureate, and graduate degrees.

The All Nation's AMP reports that 99 American Indian students received their bachelor's degrees in science, mathematics, engineering, or technology during 1997. Of the total male and females receiving bachelor's degrees in all fields, 31 percent (male) and 15 percent (female) earned their degrees in science, engineering, mathematics, and technology. And American Indian students graduating in these fields are increasing every year.[3]

An earlier report indicates that Native women were earning more bachelors degrees in science than were Native males. According to a 1989 National Science Foundation report,[4] American Indians make up 0.6 percent of the U.S. population, and are 0.5 percent of all employed scientists and engineers. They hold 0.3 percent of all bachelors' degrees and 0.11 percent of all Ph.D.s in science and engineering. American Indian women earn two-thirds as many bachelors' degrees in science as American Indian men and only one-sixth as many degrees in engineering.

What are some of the factors that influence making it through these fields?

Student success in higher education has been addressed by many studies. One finding: "many [minority] students who enroll in college return home before they graduate." So, what can be done? The National Science Foundation report[5] stresses the importance of positive early and middle school experiences in the preparation of Indian young people for science and engineering careers. Strong support programs that respect family and tribal ties are highlighted as crucial to success in college.

In a 1985 memorandum, the U.S. Office of Technology Assessment identified positive and negative factors affecting minority education in science and engineering.[6] Those minority students who make it through the science, mathematics, engineering, and technology fields possess the following positive influences:

1. Competence in the English language
2. Early enrollment in math and science courses
3. Continuation of math and science sequence in secondary school
4. Basic interest in science and math
5. Intervention programs
6. Encouragement and support from mentors, family, and teachers
7. Role models
8. Positive input from peer group with high expectations

9. Availability of financial resources
10. Self-discipline
11. Good study habits
12. Continued success
13. Challenge
14. Good environment
15. Intellectual gratification
16. Opportunity to obtain research experience
17. Second-generation college student
18. Awareness of careers and opportunities in science and engineering
19. Starting salaries and possibilities for promotion

Barriers that can influence minority students who don't make it through these fields are also identified and include:

1. Lack of academic preparedness in elementary and secondary school
2. Lack of role models, mentors and teacher encouragement
3. Lack of parental support and encouragement
4. Lack of peer support
5. Inadequate career and academic counseling
6. Lack of confidence and perception of self
7. Financial difficulties
8. Lack of awareness of career opportunities
9. Societal emphasis on sports, rock stars, and "quickie" models of success rather than a slow and sequential model
10. Loss of interest or motivation
11. Poor study habits
12. Lower educational and financial background
13. Dry unimaginative teaching
14. Lack of institutional commitment to minority students
15. Declining number of qualified teachers and lack of in-service training opportunities for teachers
16. Increasing remedial classes
17. Identity problems
18. Lack of summer jobs in science and engineering
19. Lack of cultural and society support for science
20. Lack of effective instructional programs to promote cultural awareness and development of bilingual skills
21. Lack of transitional instructional programs for students with limited English language skills.

These barriers don't have to prevent you from succeeding. Students who are deeply committed and determined to earn their degrees often overcome barriers like these and even go on to earn advanced degrees in science, engineering, mathematics, and technology.

How important is what I take in high school to a career in science and engineering?

Decisions made in high school can have a big effect on a science career. Much of the literature today suggests that students who take mathematics or science courses after grade 10 have the best chance of successfully pursuing a science or engineering career. Although most colleges require at least one year of high school science and two years of high school mathematics, this minimum background is insufficient for students planning to major in science. Early exposure to science and mathematics-in elementary and junior high school-may promote stronger student interest in these fields during later studies.

In lieu of a strong emphasis on math and science in elementary and junior high, another approach is to complete math through pre-calculus in high school. This gives students who plan to major in astronomy or physics the necessary grounding in mathematics needed to start their science courses as soon as they begin college. Many entering students have taken advanced placement calculus and/or physics, though these courses are not required.

Students are also encouraged to get involved in high school science groups, state junior academies of science, and local amateur astronomy clubs. There are literally thousands of such organizations in the United States.

What fields do science and engineering encompass?

The College Board has published a selected listing of these fields in a 1992 annual publication. Selected majors in science, mathematics, engineering, and technology-as well as student interests and skills in these fields-are reprinted with permission below:[7]

Biological and life sciences include:

Biochemistry-biochemistry majors use the physical and biological sciences to explore the nature of living organisms. They study the structure and behavior of complex molecules and how they interact to form cells, tissues, and entire organisms. Students also gain fundamental grasp of metabolism, energy flow, and the regulation of various life processes. (Students should have an interest in nature, problem solving, and research.)

Biology-in biology the animals, plants, and microorganisms that constitute the living world are studies at the levels of molecule, cell, organism,

and population. Courses emphasize an understanding of structure and function, and of hereditary and evolutionary relations. (Students should have an interest in the quality of life, laboratory work, and fieldwork.)

Biophysics-students majoring in biophysics use biology, physics, chemistry, and mathematics to explore the properties of biological molecules and groups of molecules. Recent advances in molecular biology, computing, and instrumentation make it possible for biophysicists to study the inner workings of biological systems with unprecedented precision and to learn how proteins fold, how genes are switched on and off, how organisms respond to light, how cells move, how the nervous system works, and more. (Students should have interests in natural history-astronomy, bird-watching, butterfly or rock collecting-puzzles, solving problems, crossword puzzles, computer games, crafts, reading, writing, electronics, building models.)

Biotechnology-biotechnology is an interdisciplinary field involving the molecular life sciences and engineering. Students learn techniques for using living matter to develop new products. (Students should have an interest in science, treating and preventing disease.)

Botany-majors in botany, a branch of biology, study all aspects of plant biology to become familiar with the cellular and molecular functioning of life. (Students should have interests in nature, problem solving, analytical reasoning.)

Marine biology-in the marine biology major students learn about the diversity of life in the ocean, how ocean species relate to each other as food and prey, and how different species depend on and use the physical and chemical structures of the ocean. (Students should have interests in life in the ocean, how organisms use the sea as a habitat.)

Microbiology-majors in microbiology use the basic knowledge acquired from other biological sciences, chemistry/biochemistry, and physics to study microscopic organisms such as bacteria, yeast, molds, viruses, rickettsia, and protozoa. (Students should have interests in the biological sciences, health and medicine, ecology, food production.)

Molecular and cell biology-molecular and cell biology is the study of the molecular foundation of living organisms, especially how DNA is used to define an organism, how genes are regulated, and how human beings are related to other organisms. Molecular biology, like biochemistry, underlies many aspects of genetic engineering, protein engineering, and other new approaches to improving upon nature. (Students should have inter-

ests in organisms and their development; how things work; the molecular basis of plant, animal, and human disease; disease prevention.)

Science education-a science education major is prepared to teach science in grades 7 through 12. Students typically major in one science and take additional course work in two other sciences. They also learn techniques for teaching science. (Students should have interests in working with young people, helping others, the learning process, solving practical problems, understanding complex processes, learning how things work.)

*Wildlife managemen*t-majors in wildlife management receive a solid background in basic biology, followed by a study of natural resources and wildlife management. They study conservation of animal populations and their habitats, paying special attention to species that are hunted regularly and species that are threatened or endangered. (Students should have interests in nature, conservation of natural resources, hunting, and bird watching.)

Zoology-majors in zoology, a branch of biology, study living organisms in the animal kingdom, exploring their form and function, chemistry and structure, growth, reproduction, maintenance, and interactions with each other and their world. The transmission of characteristics from one generation to the next (genetics) and organismal change through time (evolution) are of central importance. (Students should have interests in natural history, wildlife, the outdoors, bird watching, how things work, living things, fossils, working with animals.)

Engineering majors include the fields of:

Aerospace/aeronautical engineering-the major in aerospace/aeronautical engineering is concerned with the design and development of high-speed transportation vehicles such as aircraft, spacecraft, missiles, launch vehicles, space habitats, boats, and cars, as well as the physics of the flow of air, water, and plasma around these vehicles. (Students should have interests in model aircraft and rocketry, astronomy, piloting, space exploration, computer games, engine operation, computer programming, solving problems, working with people.)

Agricultural engineering-in the agricultural engineering major, students learn to apply science and engineering principles to the challenges of producing agricultural products in the quantity and quality needed by today's consumers. (Students should have interests in how things work, solving problems, improving the quality of life, quantitative games, computers, leadership.)

Chemical engineering-through study of mathematics, physical sciences, and life sciences, chemical engineering majors learn to develop means of converting basic raw materials into useful products for people. (Students should have interests in science-especially chemistry-mathematics.)

Civil engineering-civil engineering majors learn to solve technical problems involved in providing buildings, bridges, airports, transportation systems, foundations, coastal facilities, environmental control systems, and water supply and purification systems. The major prepares students to become involved in the conception, planning, design, construction, operation, and maintenance of these important public facilities. (Students should have interests in mathematics, physical sciences, computers, building things, working toward a better quality of life, public service, applying mathematics and science to practical uses.)

Computers engineering-in the computer engineering major, students learn to design and develop computer and computer-related systems. These systems include software systems, hardware systems, and combined hardware/software systems. Students take courses in basic sciences, mathematics, and engineering sciences and design. (Students should have interests in mathematics, science, and computing, and quantitative and qualitative games.)

Industrial engineering-the industrial engineering major is diverse and people oriented. Students learn to plan, design, and implement complex systems for industry that take into account the availability, capabilities, and needs of people, machines, and materials. Industrial engineering methods are used in various human activities such as health care, manufacturing, transportation, and communications. (Students should have interests in leadership, problem solving, improving the quality of life.)

Materials/metallurgical engineering-programs in the materials/metallurgical engineering major educate students in the science and technology of producing such materials as metals, ceramics, polymers, and their composites in forms and with properties suitable for practical use. The major leads to work that can range from materials production, extraction, and recycling to the design, development, and processing of materials for aerospace, transportation, electronic, energy conversion, and biomedical systems. (Students should have interests in nature and physical sciences, developing processes and systems, problem solving, quantitative and computational games.)

Mechanical engineering-mechanical engineering deals with forces and energy in mechanical (solid and fluid) and thermal systems. Students

learn to create and build machines, devices, and systems that perform useful services. (Students should have interests in mechanical devices, how things work, computers, cars, solving problems, mathematics, physical sciences.)

Petroleum engineering-petroleum engineering majors receive a broad background in engineering and business as preparation for designing ways to find and extract minerals below the earth's surface, especially petroleum. Students also learn to design the systems used in oil and gas production. (Students should have interests in solving problems, working with others, international travel, using computers, outdoor activities.)

Health sciences include:

Clinical laboratory science-students majoring in clinical laboratory science learn to perform medical tests to determine the presence and cause of disease. The program consists of a solid concentration of basic sciences and professional courses in clinical laboratory studies. (Students should have interests in solving problems and puzzles, games that involve analytic reasoning, working with complex machinery, computer science, laboratory work, helping others, medicine, biological science, observing and understanding what makes things work.)

Nuclear medical technology-nuclear medical technology majors learn to use radioactive drugs to diagnose and treat a variety of abnormal health conditions. Students learn to prepare and administer radioactive drugs to patients, operate radiation detection equipment, and perform the calculations or computer analysis needed to complete the patient's examination. (Students should have interests in biological sciences, new technologies, helping others, working in a medical setting, working with people.)

Pharmacy-pharmacy majors learn to provide drug products and drug information in all areas of patient care. They also learn to monitor drug therapy in order to ensure that the treatment is appropriate, safe, therapeutically effective, and cost-effective. (Students should have interests in written and oral communication, patience, tact, adapting to change, working carefully, thoroughly, and cooperatively under pressure.)

Mathematics includes:

Mathematics-mathematics majors develop the abilities to explore, conjecture, and reason logically as well as the ability to use various mathematical methods effectively to solve problems. Mathematics is both a

discipline and a tool used extensively in the sciences, medicine, business, industry, and government. (Students should have interests in problem solving, games requiring analytic reasoning such as bridge, chess, backgammon; solving puzzles; working with numbers; art; music.

Mathematics education-the major in mathematics' education prepares students to teach mathematics at the high school or middle school level. Like mathematics majors, students develop skills and knowledge in the field of mathematics; they also take professional education courses. (Students should have interests in problem solving, analytic reasoning, games such as chess or computer adventures, working with children, working with computers, leadership, organizing people.)

Statistics-statistics is the practical science of dealing with data. In the major, students learn to design efficient data-collection systems and to analyze and interpret information derived from the data. A statistician's primary tools are mathematics and computers. Science and logic underlie their thinking. (Students should have interests in mathematics, working with numbers, problem solving, quantitative problems.)

Physical sciences include:

Astronomy-students of astronomy seek to understand the entire universe-its constituent parts, such as the stars and planets, and the physical and mathematical laws that govern them. (Students should have interests in nature, the night sky, scientific and philosophical issues such as Where do we come from, Why is the universe expanding, and Is there life elsewhere in the universe?)

Atmospheric sciences and meteorology-students who major in atmospheric sciences and meteorology study the basic principles of atmospheric physics and dynamics and are concerned with understanding and forecasting our weather. (Students should have interests in weather, the behavior of the physical world, the environment, climate, science, mathematics, computer science, geography, serving the public.)

Chemistry-majors in chemistry study the composition, structure, and properties of matter as well as the reactions that transform one form of matter into another. Because it is an experimental science, students learn to design and perform the experiments that allow a better understanding of the physical world. (Students should have interests in problem solving, construction of models or equipment, curiosity about how things work.)

Geology-geology majors study the evolution, composition, and behavior

of the earth. In the field and in the laboratory, students develop skills that are useful for basic research and applied problem solving. (Students should have interests in the outdoors, remote places, and problem solving-quantitative and qualitative-collecting minerals or fossils.)

Geophysics-geophysics is the study of the earth and its atmosphere by physical measurements. Using a combination of mathematics and physics, along with electrical engineering, computer science, and geology and other earth sciences, the geophysicist analyzes measurements taken at the surface to infer properties and processes deep within the earth's complex interior. (Students should have interests in the outdoors, travel, taking measurements in the field, using quantitative analysis to learn about the earth, computer languages, graphics, and programming.)

Oceanography-majors in oceanography are concerned with the oceans-their movements, composition, and origin; marine plan and animal life; and the wise use of the sea's resources. (Students should have interests in natural sciences, outdoor activities, the oceans, and the marine environment.)

Physics-physics majors study a variety of simple systems such as pendulums, violin strings, heat engines, magnets, mirrors, atoms, and galaxies in order to explore how these systems, or particles within them, exchange energy and momentum with their surroundings, exert forces on one another, and move under the influence of these forces. (Students should have interests in why things behave as they do, quantitative relationships between measurable variables, improving the quality of life.)

There are many other fields like computer and information science that students who are interested in the sciences can major in. It is suggested that you work closely with your college advisor to identify your interests and skills in order to match the major-and four-year institution-that will help you earn your bachelor's degree in these fields.

What can you do with an undergraduate science, mathematics, engineering, or technology degree?

It used to be that these fields were reserved primarily for advanced study and for those persons who wanted to teach and conduct research in academe. But today, undergraduate degrees in science, mathematics, engineering, and technology bring employment opportunities in government, business, industry, tribal communities, and academe (a later chapter includes more in-depth discussion of other career opportunities).

KEY POINTS:

* Tribal colleges serve many important functions, specifically the establishment of solid relationships between students and faculty, a requirement for follow-through mentorship.
* American Indian students graduating in the fields of science, mathematics, engineering, and technology are increasing every year.
* Early and middle school experiences in science, mathematics, engineering, and technology and strong support programs that respect family and tribal ties are crucial to success in college.
* Decisions made in high school regarding courses taken, have a strong impact on successfully pursuing a science or engineering degree.

CHAPTER SUMMARY:

Student interest in the sciences many times dictates the major they study in undergraduate work. This chapter has looked at what selected majors in science, mathematics, engineering, and technology are and some of the factors associated with making through school in these fields. American Indian tribal colleges are briefly cited as springboards for going beyond the two-year college. Finally, Native involvement and a continuing upsurge in enrollment and graduation in science, mathematics, engineering, and technology majors is explored.

ACTIVITIES:

Define your interests and skills. Then select one of the majors in the science, mathematics, engineering, and technology listings we've provided in this chapter and meet with your advisor. Discuss the pros and cons of that particular major and make a decision as to whether it's really for you or you for it.

CHAPTER THREE

GETTING FROM HERE TO THERE: MENTORS AND THE TRANSFER PROCESS

The All Nations Alliance for Minority Participation (All Nations AMP) has developed a "partner system" between the 25 tribal colleges and 18 universities in a nine-state area (see Appendix B for institutions involved in this partner relationship). This means that transfer among these higher education institutions is already an intended component of the All Nations AMP program and this should make your transfer easier.

The All Nation's AMP has also assisted in the development of articulation agreements between some of the tribal colleges and the four-year institutions. An articulation agreement simply means that selected credits and some of the courses you'll take at your tribal or community college will transfer to the four-year institution. In other words, you'll receive credit for courses taken at the community college that will apply to your four-year degree.

There may be a transfer program in place at your tribal college to assist you in achieving your baccalaureate degree. A transfer program is a program that helps community college students prepare for and make the transition to the four-year institution.

All of the tribal colleges have student support services available to you. The function of the student support services at Turtle Mountain Community College, for example, is to help the student succeed in college through counseling, advising, tutoring, developmental courses, career counseling, assistance with application forms, general help in the transfer process. All services are available to eligible students at no cost.

How many students transfer each year?

According to another publication by the College Board,[8] there are over 700,000 transfer students each fall with additional transfers occurring at the beginning of the spring term. Students who transfer among institutions, do so for a variety of reasons. In any case, transfer can be a difficult and stressful experience. Planning your transfer will help you ease the transition process and begin to develop systematic ways of planning for other parts of your life.

This chapter is designed to help you anticipate the necessary steps in the transfer process and to demystify transfer. This handbook should be

of use to those planning transfer and those who haven't even entered college, but are anticipating transfer from a community college to a four-year institution. Transfer is a process, one that includes setting your goals, gathering information, applying for admission and financial aid, making a decision, and adapting to your new college.

Why do students transfer from one institution to another?

Lee (Cheyenne) is currently a student at United Tribes Technical Center and loves to build model airplanes. He spends much of his time on the computer. Lee thought that he'd attend the two-year college to learn as much as he needed to start his own computer business. But as he got into his coursework, Lee discovered that his real interest was with the design and development of high-speed transportation vehicles like air and spacecraft.

Lee's advisor at United Tribes recommended that he contact a four-year institution that offered an undergraduate degree in aerospace/aeronautical engineering. Lee found that Central Michigan University was just the school for him and took the necessary steps to transfer. After doing his research, he soon realized that a bachelor's degree wouldn't be enough-he'd need a master's degree to work in research and development for industry.

In Lee's case, he started classes at the community college in order to start a computer business and thought that the community college experience would suit his needs. Through coursework and with help from his advisor, Lee found that he'd need to earn his bachelor's degree-and a master's degree-in order to achieve his career goals.

This scenario may or may not apply to you. You may already have your bachelor's degree in mind but wish to attend a tribal college close to home before you go on to the four-year university. Or, you may be enrolled in a four-year university but would like to earn the equivalent of freshman and sophomore year credits at the community college. You might also be one of the many students who may qualify for financial aid, which will help you to go on to the four-year institution.

When do I start planning for transfer?

The Dull Knife Community College has a program that deals with early start admissions for those eligible juniors or seniors in high school who wish to enroll to strengthen and enrich their educational program. Eligible students must be at least 16 years of age, and may enroll in any course with the written consent of their high school principal.

Planning for transfer to a four-year institution should begin as soon as possible. Ideally, planning would start in high school where there would

be a heavy emphasis on science and math courses. As a matter of record, Haskell Indian University strongly recommends completion of these high school subjects-4 units of English, 2 units of Algebra, 1 unit of Geometry, 1/2 unit of Trigonometry, 1 unit of Foreign Language, 2 units of History, and 2 units of Natural Science (biology, chemistry, physics).

The Haskell Indian University catalog further recommends that students who plan to transfer to a four-year college plan to take two units of a foreign language and warns that students entering with less than this minimal preparation often find it necessary to take academic preparation courses that add extra hours to their graduation requirements.

The transfer process takes time and energy. You should allow at least one year of planning before you intend to transfer. A critical component of the transfer process is to work with your advisor-who may also serve as your "follow-through" mentor-both during your tribal college experience and planning for transfer. Follow-through mentors are college advisors or teachers who lead through guidance and encourage students to move forward by providing support and guidance.[9] One note of caution: Choose your mentor wisely and "shop around" for an advisor/mentor that you can get along with.

Should I attend a community college before going on to the university?

For many tribal community college students, attending a two-year institution allows them to stay close to home and family while deciding whether or not they want to go on to upper-division study. Since community colleges are smaller than most four-year institutions, individual, one-on-one attention from community college faculty is also a plus. Some students, especially in science and mathematics, find that they need tutoring and tribal colleges provide tutoring services that are often less threatening to the student than the four-year university setting.

Community colleges are also less expensive to attend than the four-year institutions and some students begin their work at community colleges with the knowledge that they will go on to the four-year institution. Whether or not you know that a bachelor's degree is in your future, sound planning is a must. You need to think about the transfer process and, if possible, enroll in a transfer program at the community college.

What are some steps I can take to ease my transfer to the college of my choice?

First, view the community college as the first two years of your four-year higher education experience. Most community college coursework will

transfer to the four-year university. For example, the Leech Lake Tribal College catalog states that "courses are designed to be transferable to many four-year colleges and universities." This catalog also states that the college will assist students to transfer their credits to another school.

While in high school, take the college admission test, even if you're not sure that you want to go to the four-year institution and commit yourself to at least one year at a community college before transferring to the four-year institution. But be advised that some of the four-year institutions require junior-year status before admitting community college graduates to some majors.

Check into all colleges around your area. Get the catalogs for the four-year institutions you're interested in and stay in close touch with your community college advisor and plan your community college coursework so that it will transfer to your major at the four-year. Also, ask that your mentor relationship continue on into your studies at the four-year university. Follow-up mentorship is fast becoming a key ingredient for success in higher education.

Identify which four-year college or university you want to attend. Think about your reasons for wanting to attend this institution. Think about any negative outcomes of attending this institution.

Strive to be the best you can be in community college. Many four-year institutions look closely at your community college coursework and grade point average when considering you for admission.[10]

What if I don't know whether or not I want to go on to the four-year college?

Beginning at a tribal community college is not a bad idea if you're not sure about going on for your bachelor's degree. You'll have to weigh several factors including whether or not you're willing to invest the necessary time and money in the pursuit of the bachelor's degree. You must also look at how your attendance at the four-year institution will impact your family. Answers to these questions will help you decide if pursuing a B.S. degree is appropriate now or, whether you'll need more time to plan for this transition.

How do I identify the university or college I want to transfer to?

Go to the nearest community college library. Most community college libraries have a collection of four-year catalogs. You should study the college catalogs that you're interested in and weigh the course offerings.

You may also want to look at the university's mission statement and see if you agree with the contents. The location of the college or university is also an important consideration for many students. Here again, questions about how attendance at this institution may impact you and your family may be asked.

Who should I work with at the community college or high school?

High school counselors are invaluable to you if you are serious about going to college. The counselors are trained to help you through all aspects of the admissions process. If you're at the community college, rely on your advisor-and ask your advisor to become your follow-through mentor-and to point you in the right direction. Depending on how well you know your advisor-and how well he/she knows you-the stress of the transfer process can be lessened.

KEY POINTS:

* Some tribal colleges have "articulation agreements" with four-year institutions that will make it easier to transfer credits between the institutions.
* A transfer program is a program that helps community college students prepare for and make the transition to the four-year institution.
* Planning for a career in science, mathematics, engineering, and technology should begin at the high school level with a heavy emphasis on science and math courses.
* Your high school counselor and tribal college advisor/mentor are two of the most important people in developing your career. Choose your follow-through mentor wisely. You must establish and continue a good relationship with your two-year advisor and ask that he/she continue to serve as your mentor when you transfer to the four-year institution.

CHAPTER SUMMARY:

The importance of working with and including your tribal or community college advisor in planning your transfer is stressed in this chapter. You should shop around for an advisor that has your best interests at heart as your advisor can be one of the most important people in the transfer process. He or she will help you find transfer programs that may be in place at your two-year college and will know of any articulation agreements already in place at your tribal or community college. Discussion in this chapter centers on helping you answer questions dealing with how to identify the college you'd like to transfer to and what high school courses you should take to be sure you're prepared to go into the major you want.

CHECKLISTS:

PLANNING YOUR TRANSFER:
Ask questions like:

1. Have I allowed at least one year to plan for my transfer?
2. If I'm currently enrolled in a two-year college, have I discussed my plans with my two-year advisor or the new campus transfer specialist?
3. Have I called or visited my transfer college?
4. Have I obtained the college catalog?
5. Have I obtained a transfer brochure that includes information on admission criteria and on materials required for admission (e.g., portfolio, transcripts, test scores).
6. Have I checked with the transfer college to see if my major has limited enrollments or its own special requirements such as a higher grade point average?
7. Have I written for and received information on financial aid (how to apply and by what date)?
8. Have I reviewed the information and made an appointment to talk with an advisor/counselor in the college or program I want to enter?
9. Have I asked about course transfer and admission criteria?
10. If I'm not currently enrolled in a college or university, have I set up a meeting with a transfer specialist or an admissions officer at my intended transfer college to plan the steps I need to take.

ACTIVITIES:

With the help of your tribal or community college advisor, find a listing of four-year universities that have articulation agreements with your two-year college. Write for the catalog for those institutions (you might want to include several other students who are planning on transferring) and develop a practice "program of study" for you during the first two years of college. Share this information with transfer program personnel-if there is a transfer program at your community college-and ask to be involved with the transfer program. Discuss this activity with other students and your advisor.

CHAPTER FOUR

GETTING CREDIT WHERE CREDIT IS DUE: PAINS AND GAINS

The whole issue of transfer credits is confusing and varies from university to university. In general though, you should work with your tribal college advisor as soon as you begin taking classes at the community college. Your advisor will be able to help you take basic courses that will be transferable to the four-year university.

What are the different types of credit?

There are three areas that most colleges require students to earn credits in. Those are general education requirements, requirements in major field of study, and electives. Colleges usually advise students to focus on completing general education requirements in their first two years of college, before taking electives and the courses required for a major.

Most four-year universities require that freshmen and sophomores take the general education courses before they take major-specific courses. But if you are attending a community college and plan on graduating with an associate degree, your advisor will help you plan a course of study that will include major-specific courses. This may become a problem for you if you decide midway that you'd like to transfer to the four-year university.

Some colleges have core requirements either in addition to general education requirements or in place of them. These are specific courses that all students must take. Many students transfer after the freshman or sophomore year with little loss of credit as long as they have been completing general education courses that frequently meet the general education requirements of other institutions.

Courses in a major may not meet the requirements of the major at your transfer institution, which may want the bulk or even all of the major taken there. This is often true for professions-education, business, engineering, nursing. On the other hand, prerequisites to the major usually do transfer. In fact, you may increase your chances of being accepted into competitive programs if you have completed all the prerequisites for your major. Catalogs of the degree-granting institutions you are considering will list the necessary prerequisites for specific programs of study.

Courses that are not accepted toward the major or as general education requirements may transfer as electives. Some courses may not transfer at all.

Lorraine was a very talented Cherokee student who'd earned high grades in high school and at Haskell Indian Nations University where she earned her associate degree. Her interests were varied; she was creative but very methodical in her approach to studying and her classes at Haskell reflected her vast and varied interests.

Lorraine decided to transfer to the University of Kansas and study horticultural science but was shocked to realize that only a few of the credits she'd taken at Haskell would transfer. Her tribal college advisor had warned her not to take so many "fun" courses but Lorraine hadn't listened. When Lorraine transferred to UK, she was classified as a first semester sophomore even though she had earned 45 hours of credit at Haskell.

There's no doubt about it-college is fun! But planning for your life and career will take honest and concerted effort. Before you enroll in any class at the tribal or community college, you should ask yourself how or whether the class might transfer to the four-year university.

How can I avoid taking credits at the tribal college that won't transfer?

A good rule of thumb: take courses at the community college that represents collegiate-level coursework because these usually transfer to four-year institutions. This is not to say that you shouldn't take remedial or developmental courses you'll need to make up deficiencies in basic skills that will enable you to do college-level work. But just be aware that remedial courses usually won't transfer and if they do, it will probably be as elective credits.

How do semester hours and quarter hours transfer?

Some colleges and universities operate on the quarter system. This means that classes are offered during the four seasons: fall, winter, spring, and summer. Other colleges and universities operate on the semester basis: fall and spring (they may offer summer courses that are equivalent to semester hours but the time dedicated to each of these courses reflects the semester hours).

Although many four-year institutions vary on the number of credit hours needed to transfer in as a junior-and most transfer institutions require junior status-60 semester hours will equal 90 quarter hours of credit at a baccalaureate institution. Consider this if you plan to transfer-it's not to your advantage to earn more than 60 semester (90 quarter) hours of credit at a tribal or community college.

The change from quarter credits to semester credits is a mathematical procedure that can cause a loss of credit. For example, if your current college is on the quarter system-fall, winter, spring, summer-you need only multiply the number of transferable credits by two-thirds to obtain the equivalent semester hour credits (five quarter credits are equal to 3.3 semester credits). But the transfer of five quarter hours to 3.3 semester hours will mean that, if the university requires five credit hours in a course, you'll have to retake the course. Pay close attention to the transfer university's course/credit requirements.

Who makes the decision of what transfers?

The receiving college or university (the college you're transferring to) decides what credits transfer and whether those credits meet its degree requirements. The accreditation status of both your sending and your receiving institutions can affect the transfer of the credits you earn.

Most tribal colleges are either accredited institutions now, or are close to being accredited. To be accredited means that colleges have gone through a formal evaluation process by one of the major higher education accreditation agencies in the United States. In order for credits to transfer among accredited higher education institutions, all colleges and universities involved must have gone through the same evaluation process.

As a basic rule of thumb, higher education institutions will accept credits from courses and programs like those they offer. This means that the transfer college will look for similarity in course goals, content, and level-accredited institutions all meet similar criteria in designing course content.

When will I find out which of my courses will transfer and how the credits will be applied to the requirements of my degree?

Here again, the best advice is to ask. When you apply for admission and are notified of acceptance, many colleges will tell you your academic standing (junior, senior, etc.). This is usually an unofficial determination. You're actual standing will probably be determined after you've submitted your final transcript with your last semester's grades. Ask the admission's office at the new college to put you in touch with someone who can help you.

Will some colleges accept "alternative" credits?

If you happen to be an older or returning student, you may be able to apply some of your practical knowledge, employment experience, or

professional workshop experience to your transfer college. This is not always the case, though. Be sure to check with the transfer college and ask whether the transfer college will accept practical experience for college credit. Some of the areas that might equal college credit include prior experiential learning experience, credit for military training, and credit for professional credentials.

Do I have any rights as a transfer student?

All universities have student policies and as a transfer student, those policies directed at transfer students should summarize your rights. If you have questions about the evaluation of your credits, call the office of admissions and speak with the transfer specialist.

Ask why judgments were made about specific courses. Many concerns can be cleared up if you understand why decisions were made. If you're still not satisfied, you can appeal and ask for the following:

* A clear and understandable statement of the four-year institution's transfer policy;
* A fair review of transfer credits and a written explanation of why credits were or were not accepted; and
* A copy of the formal appeals process for transfer students.

Any decision can be appealed to the transfer specialist at your new university. Usually, you'll have to fill out an appeals form, the department or committee will review your appeal and make a decision; and you will receive, in writing, the outcome of the appeal. If you disagree with the formal appeals process you can usually appeal that decision to the transfer specialist at your new campus. Sometimes you may need to provide a course syllabus from your community college to the department or instructor at the new university. Keep all of the course syllabi from your courses.

KEY POINTS:

* There are three areas that college credits fall into: general requirements, requirements for the major, and electives.
* The receiving (or transfer college) makes the determination of which credits transfer. If you don't agree with the receiving college's assessment, there are usually appeals processes in place that you can use.
* Always work with your advisor at the community college to determine whether or not the courses you are taking will transfer.
* All of the 31 tribal colleges are accredited higher education institutions, which means that most the courses (except some electives) you

take during your two years at the tribal college are considered to be equal to four-year courses taken at a four-year university.

* Keep a file of all course syllabi and keep copies of all the university correspondence and records submitted. Universities are large and documents get lost.
* Keep a log of your conversation with university personnel (name, date, time, etc.) and what was said in the conversation.

CHAPTER SUMMARY:

Getting credit where credit is due is not as simple as it sounds. This chapter looks at the reality that all credits are not created equal. What we mean is that you have to be very careful to take courses during your two-year college experience that will transfer to the four-year institution and apply to your degree. Again, you'll have to work with your advisor during your first year at the community college to make sure that the credits you take will transfer. This chapter also looks at your rights as a transfer student and says that you don't have to accept the "ruling" as to whether your credits will transfer. Finally, the difference between semester hours and quarter hours is briefly discussed.

CHECKLISTS:

TRANSFER CREDIT GUIDE

Ask questions like:

1. Have I worked with my high school counselor or my two-year college advisor to make sure all of my transferable coursework is included in my application packet?
2. Have I checked to see what the required minimum number of credits is at my new institution?
3. Have I checked to see which of my community college courses may be prerequisites to my major at the new college?
4. If I'm transferring to a semester system from a quarter system, have I checked and rechecked my multiplication for the correct number of credit hours?
5. Have I checked with the admission's office on my academic standing at the new university (if it's available)?
6. With the help of my two-year advisor, have I thought about what courses I'd like to take in my major during the first year?
7. Do I know what my rights are as a transfer student?

CHAPTER FIVE

REACHING FOR YOUR DREAMS: THE DOS AND DON'T S OF COLLEGE ADMISSION

The admissions process is probably the first thought that comes into your head when you're talking about transfer to a baccalaureate-granting institution. But making the decision that you're going to transfer and filling out the forms for admission is really just the beginning.

Larry was a football star in high school but injured his knee badly during the last game during his senior year. This dampened his dreams of eventually being drafted for the National Football League. He thought he'd still go on to college though so he contacted his high school counselor and filled out all the necessary forms to go to a four-year institution near his home.

Since Larry had mailed in all the forms he thought were necessary for admission to the university, he went about his business during the summer. He hadn't heard anything from the school so he thought everything was okay. He packed his bags and headed out for the first day of classes for fall semester.

You can imagine his surprise when he got to the school and found out that he hadn't completed the admissions process. Larry wasn't enrolled in anything-no dormitory, no program of study, and no classes-and the university hadn't even planned for his arrival. He had to start at the beginning and wait until the next semester to be admitted to the school.

Like all other components of the transfer process, it's really up to you as to whether or not you will be admitted to a four-year institution. The planning process should start in high school continue through to your tribal community college experience. Just going to a community college will not guarantee admission to a four-year institution. A lot of planning and hard work must precede any application to a four-year institution.

All higher education institutions have rules and regulations that will determine when and if you will attend. Thankfully, most higher education institutions also have a homepage on the World Wide Web so that admissions information (and almost everything else) is available within minutes.

Are there any tips for the early stages of the admission process?

Yes. Make it a practice to make at least one copy of everything having to do with the admission process. Also keep a log or record of correspondence with all of the universities you've applied for admission to-use file

folders with the different university names. Be sure to keep all of the following materials in one place so that you can get to them easily:

Transcripts-You'll have to have your transcripts from every higher education institution you've attended (and your financial aid transcript, if you've received financial aid). Most colleges require that "official" transcripts are submitted and there is usually a small fee for these. The point here is to begin planning early enough so that you can write (or e-mail) the registrar's and admission's office at your current institution and have them send your transcripts to the transfer institution in plenty of time to meet the deadlines.

Test scores-It is highly recommended by most higher education institutions that you take either the SAT (the College Board's Scholastic Aptitude Test) or the ACT (American College Testing Program Assessment). The College Board suggests that you take these tests at least six weeks before the admission's application deadline.

Recommendations-It's a good idea here to ask someone who's in the field you'll be studying (astronomy, animal science, etc.) to write you a letter of recommendation. Some colleges will identify the type and source of recommendation letters they'd like to see so pay attention to what the university wants.

Essay-You may be required to write an essay for admissions. Here, the transfer college is looking for honesty, maturity, and your potential and willingness to grow at the new institution. They aren't looking for criticisms of your current institution. Your essay should include your reasons for choosing one four-year university over another, your plans for the future, and your commitment to achieving your bachelor's degree.

Good Standing-most four-year colleges and universities want to know that you're in good standing at your two-year college and that you're not on probation. In some cases, though, universities will accept students on probation. You'll have to check on this.

Interviews-Not all institutions require these anymore. But depending on your field of study, you may be requested for an interview. You may have a lot of questions about the university and want to arrange for an interview for yourself. In any interview situation, try to use this time to physically walk the campus and observe the students, faculty, and anything else you think might be of value to you.

Housing-If you'll need on-campus housing, contact the housing office at the transfer university as soon as you make the decision to transfer. Upper

classmen usually decide to live off campus. In that case, you'd be responsible for finding your own housing but you can survey off-campus housing through local newspapers, off-campus rental agencies, or through word-of-mouth from friends.

Child Care-If you're one of many students who have young children, you'll need to contact your new university to see if and when you can get your children in the university's child care center or program. You'll also want to contact the State Department of Social Services to find quality off-campus child care programs and centers through the state-funded Child Care Resource and Referral agency (CCRF) (see chapter thirteen for further discussion on child care). Funding is also available for some parents in the form of subsidies (you must meet low income guidelines, need child care while attending college, and your children must be between six week to 12 years old). Check with your State for more information.

How do I get a copy of the timelines/deadlines for application?

If you have access to a computer that is online, go to the university's web site and try to contact the university by e-mail. You may need to write to the college of your choice and ask for the catalog. Somewhere in the catalog, there is a listing of the deadlines for the admission process. But remember, you should be doing tasks associated with the admissions process many months before you actually fill out the forms.

Will I be guaranteed entrance to the university of my choice?

You are responsible for completing the specific courses required for admission by any given college or university. All tribal colleges suggest that you should consult with the advisor of the institution to which you wish to transfer in order to be assured that you are completing courses appropriate to their specific degree objectives.

There are no guarantees for college admissions even if you have a strong grade point average. Factors associated with admissions include how much room the university has for new students, what your major will be at the four-year institution, whether you have funding to go to school, how you scored on the college entrance exam, and whether you followed through on the admission's process.

How does my advisor enter into this process?

Your high school counselor and community college advisor play very important roles in your continuing education. Both the counselor and the advisor are trained professionals in the area of higher education. It is

their responsibility-if you ask them to help you-to facilitate your transition to the four-year university or college.

How do other students enter into this process?

Peers can be most helpful in the admissions process. To work through the process with your peers often lessens the anxiety and stress associated with making this transition. Other students are going through the same things you are and the old clichÈ; "misery loves company" may well apply here.

Are there any tests that will measure my level of education?

Community colleges generally do not require testing for admission. But that is not the case for four-year institutions. You should be prepared to take either the SAT I, SAT II, or the ACT for college admissions. And, some counselors and college advisors suggest that these tests be taken in high school rather than waiting for the time constraints at the university.

For a potential student who has never attended college or for a transfer student with less than 30 college-level courses the Test of Adult Basic Education (TABE) must be given to determine the level of education. Scores received on the TABE are then used to place the student at the appropriate level for them.

The TABE ensures that a student is advised for the appropriate courses upon registration. Students are placed in the appropriate level of study according to the TABE level. Supplemental studies courses include reading, math, and language. But please be aware that credits earned from developmental studies classes do not count toward degree or certificate completion requirements.

So, what do I have to do to get admitted to a four-year institution?

We'll assume that you're currently attending one of the tribal colleges and that you've already decided that you're going to transfer to a four-year institution in science, mathematics, engineering, or technology. First, you must work very closely with your community college advisor to have them assist you in making almost all the decisions associated with your transfer.

Your library probably contains college catalogs from a variety of universities throughout the nation. Many of the college libraries also have four-year university information available through the World Wide Web also. You'll have to check on this.

If you have identified a college you'd like to attend and your community college library doesn't have the catalog or access to the World Wide Web, get the address of the registrar's office at that school and write for a copy of the school's catalog. There are several directories of higher education institutions like the "Higher Education Directory"[11] that list addresses and telephone numbers of all the higher education institutions in this country.

At this same time, you should write to the admission's office to ask for admission's forms and information. The "Annual College Guide for American Indians"[12] is also an excellent resource (update every year) for tribal and community college students who plan to transfer to a four-year institution.

Once you've determined the funding possibilities, write for financial aid forms. With a request like this, you may be able to send an e-mail for faster service.
When you get the forms, make several copies so that you'll have something to do a trial run on and then fill out the financial aid information (see the next chapter for more information on the financial aid process).

When the university catalog that you've ordered comes in the mail, open it immediately and make sure that you also make a duplicate copy of the admissions forms so that you can pencil in one copy. Then take all the information you've previously gathered-your birth certificate, high school transcript(s), community college transcript(s), letters of recommendation from advisors, faculty, or professional associates-and have those at your fingertips to fill out the admissions application.

Fill out the admission form in pencil first-it's a good idea to have your community college advisor involved at this point-then fill out the final admission's form and mail the application. If you don't hear from the university within a month from the mailing date, write a letter to see what the status of your application is (this is a good idea for your records and it will let the university know that you're following through on your admissions application).

Finally, start planning your trip to the new university or college. You've completed the first and very basic phase of your wonderful adventure!

KEY POINTS:

* Getting admitted to a four-year university takes a lot of hard work and planning. There are no promises that you'll be admitted to a four-year university.

* If you have a computer, go online and get copies of your new college's deadlines for application. Begin planning for your transfer at least six months ahead. Always meet the timelines and deadlines set by your new college.
* When you complete your written admissions process, always make at least two copies of your admissions information.
* Work with your community college advisor well before the actual admissions process.

CHAPTER SUMMARY:

Chapter V looks at the admissions process and provides you with a checklist of things that you must look at in order to assure enrollment in the institution you want and within the timeframe you want. This chapter also stresses the importance of understanding-and meeting-timelines set by the four-year institution.

CHECKLISTS:

FOR THE ADMISSIONS PROCESS
Ask questions like:

1. Have I worked very closely with my two-year tribal college advisor?
2. Have I contacted the registrar's office at my new college and ordered (either online or by surface mail) the college catalog?
3. Have I written the admissions office at the new college to ask for admissions forms and information?
4. Have I checked on the possibility of receiving financial aid?
5. Have I made at least two copies of all the admissions forms so that I can use one as the practice form?
6. Have I applied for admission?
7. Have I filled out the application as early as I could, prior to the deadline?
8. Have I enclosed the acceptance fee?
9. Have I requested that official transcripts be sent to my new college from every institution I have attended? (You might be required to provide a high school transcript or G.E.D. test scores also.)
10. Have I rechecked to be certain I supplied the college or university with all the necessary paperwork?
11. Have I submitted a complete admissions application to my new college?
12. If I haven't heard from the new college within a month of sending my application in, have I written or called them to ask about the status of my application?

13. If I've been accepted for admission, do I have anything in writing telling me which courses transfer and which do not?

FOR ADMISSION MATERIALS
Ask questions like:

1. Do I have my transcript information-letter to all other higher education institutions asking for my "official" transcripts be sent-ready for the admissions process?
2. Have I taken the college entrance exam and received my test scores to that those can be sent to my new college?
3. Have I asked a professional in the field I'm going into to write me a letter of recommendation?
4. Have I received that letter of recommendation and is it ready to be submitted along with my admissions application?
5. Do I have evidence of my academic good standing from my two-year college?
6. Have I considered an interview with the new college?
7. Have I started a search for on- or off-campus housing?

CHAPTER SIX

SCHOLARSHIPS, GRANTS, AND LOANS: CASH FOR COLLEGE

Ray (Winnebago) wants to get his degree in physics and has a strong high school and community college coursework background for that degree. He has been attending the College of the Menominee Nation on a tribal grant but finds that he must get additional financial support if he is to continue his work toward his four-year degree in physics.

Ray's looked all over to see what is a available to him financially but he doesn't know what different types of financial aid are or how he'd qualify for them. By talking with his two-year advisor, Ray finds that he'll qualify for work-study in addition to the tribal grant he's already receiving.

What is financial aid?

Financial aid is exactly that-monetary assistance for students who would like to go to college. There are two basic types of financial aid; aid that doesn't have to be paid back and aid that has to be paid back or forgiven for work performed. We'll cover the two separately:

Financial aid that doesn't have to be paid back-grants, scholarships, and fellowships don't have to be paid back to the granting agency. Grants are awarded based on the applicant's financial need. Scholarships are awarded to undergraduate students based on the applicant's academic merit, although financial need is sometimes taken into account in determining the award amount. Scholarships provide funds toward tuition, fees, and other educational expenses. Most scholarships do not provide funds for living expenses.

Fellowships are another form of financial aid but are usually awarded to graduate students based on the applicant's academic merit. Financial need is rarely taken into account. Most fellowships provide a stipend for living expenses in addition to funds for tuition, fees, and other educational expenses. Residential fellowships provide support for a student to use an institution's facilities, such as special library or museum collections. Dissertation fellowships support students while writing the thesis. ROTC scholarships and certain medical fellowships require a few years of service in exchange for the financial aid. If you fail to complete the service requirement, then you must pay back the award.

Financial aid that has to be paid back-loans have to be repaid with interest to the loan agency. Loans are normally repaid with interest but some

loans do not need to be repaid until the student has graduated or otherwise left school. Loans represent more than half of all financial aid.

A lot of students work while attending college. What is work-study?

Student employment is another type of financial aid. Federal and state work-study programs provide employment during the academic year; the work is part-time and the government pays for a portion of the salary. Most students who receive work-study jobs are undergraduate students, but graduate students sometimes meet the eligibility requirements.

Most types of financial aid programs are need-based and the amount of aid you receive depends on your financial situation. Other sources of financial aid are merit-based and usually depend on academic, artistic, or athletic talent, and may use your grades, test scores, hobbies, and special talents as awarding criteria.

Most sources of financial aid require that you be enrolled at least half-time, though some awards are restricted to full-time students. There may be other restrictions as well. For example, most federal aid programs are restricted to US citizens, permanent residents, or eligible non-citizens. If you are a US citizen, male, and have reached age 18, you must be registered with Selective Service to receive federal aid-be prepared to offer proof of this to the financial aid office.

What are the federal sources of financial aid?

The Federal Pell Grant serves as the foundation for all other student financial aid. All other aid is supplemental. The Pell Grant is applied toward all mandatory school costs such as tuition and fees. It is awarded on a need basis. Free Application for Federal Student Aid (FAFSA) application forms are available from high schools or tribal community college student support services or the financial aid office. Each student is expected to apply for the grant.

You must complete the FAFSA to be considered for the federal college work-study program. A student who desires employment to help meet college expenses is potentially eligible for the college work-study programs. In order to qualify, you must be enrolled or be accepted for enrollment in a college and meet the satisfactory academic progress requirements. Your eligibility for the federal college work-study program depends upon your need for employment to defray college expenses.

If you are a member of a federally recognized Indian tribe or band, you may apply for grants-in-aid administered by the Employment Assistance

Program within the Bureau of Indian Affairs (BIA). These are called the Bureau of Indian Affairs Employment Assistance Adult Vocational Training grants. You must apply early each year through the BIA agency office where you are enrolled.

If you are more than 1/4 Indian blood, you should be eligible for BIA scholarships.[13] BIA/Office of Indian Education Programs funds may only be awarded to a person who is a member of a federally recognized tribe. Native students must apply for a BIA/OIEP Indian Education Grant through their tribe, home agency, or area office of Indian Education. Check with the US Department of Interior by writing to: US Department of Interior, BIA Higher Education Grants. Mail Stop 3530 MIB Code 522, 1849 C. Street, N.W., Washington, D.C. 20240-0001, (202) 208-4871.

Tribal offices are other good sources of financial aid. Some tribes have scholarships for their members, although the awards are usually for very small amounts. Very often if you don't qualify for a BIA/OIEP grant, the tribe will award a "tribal" scholarship. Each tribe handles its own funding differently, with different award amounts and deadlines, so it is best to contact your tribe directly.

The Indian Health Service Scholarship Program (IHS) provides full tuition and fees, books, uniforms, equipment, travel, insurance, national board exams, travel for clinical training, and a stipend for students majoring in health professions, engineering, and accounting.[14] The deadline is usually March 31 of each year.

Many colleges and universities also offer incentives to encourage Native American students to enroll. Be sure to see if anything like this is offered at your new institution. In Montana, for example, Native American students who attend any state school qualify for a fee waiver if they are Montana residents, at least 1/4 Indian blood, and have financial need.

The Daughters of the American Revolution American Indian Scholarship Fund typically awards $500 in scholarships to Native American students all across the country. Deadlines are August 1 for the fall and November 1 for the spring.[15]

The Veteran's Administration is authorized by law to provide a wide range of benefits to students who have served their country in the Armed Forces and to their dependents. Veterans may be eligible for educational benefits under the G.I. Bill that provides grants, loans, and work assistance.[16]

What are the timelines/deadlines for filing for financial aid?

Every financial aid institution sets their deadlines for receipt of application. Most grant, loan, and scholarship agencies receive a lot of requests for financial aid every year. These agencies have deadlines for financial aid application set-and follow them. Given this fact, you should begin your search for financial aid at least one year before you plan to apply for admission to your transfer college or university.

Am I ultimately responsible for follow-up on applications for financial aid?

Like the rest of life, yes. You are responsible for following up on financial aid applications. The entire higher education experience is designed to equip you to function as responsible adults in this society. With very few exceptions, you will not receive any notice from funding agencies that the deadline is approaching to file or re-file for the next year's grant, loan, or scholarship.

Are there any grade point average requirements for financial aid?

All financial aid is different but generally, if your grade point average is 3.0 (B average) or above, your chances of getting financial aid are strong. All funding agencies like to see the promise of success and good grades indicate a high probability for success.

How does my advisor enter into the financial aid process?

Your advisor can be the most important person in this process. Your advisor can direct you to appropriate people who are trained professionals in the financial aid process. It would be useful to establish a relationship with a financial aid officer at your new institution so that you are apprised of any new changes in the financial aid arena.

How do I apply for financial aid?

You'll have to fill out forms that look intimidating, but you can do it. The key: be prepared. Before you start, get organized:

First, keep a file with all the information you gather about various financial aid programs. Gather the documents you'll need, including recent bank statements, your driver's license, and your latest federal tax returns and W-2 forms. (For a dependent undergraduate student, this would mean the parents' return and W-2; for an independent undergraduate or a graduate student, the student's own return and W-2).

Next, set up a calendar, noting application deadlines and important requirements, and then follow your schedule to the letter. Keep copies of all applications you file and the dates you filed them. Remember that timeliness and accuracy are the watchwords when you apply for financial aid. Colleges may award aid on a first come, first served basis. If you send incomplete forms or submit your forms late, you may not receive the maximum aid for which you may be eligible.

To help ensure that you're considered for federal, state and institutional (college-based) aid, follow the guidelines below. Keep in mind that you must reapply for aid each year you are in school or when you transfer to a different college.

Ask your high school guidance office for a Free Application for Federal Student Aid (FAFSA) or get a copy by calling 1-800-4FED-AID. Be sure to check with the financial aid offices of the colleges you're interested in to see if they require any other forms or applications.

Complete the FAFSA. Remember, if your form is incorrect or incomplete, it will be returned to you, which can result in delays. Before mailing, check to make sure you've completed it correctly and that it includes both the student signature and, if required, the signature(s) of parents, guardians or other appropriate persons.

Submit your completed FAFSA directly to the processor designated on the form as soon as you can after January 1. Approximately 4 weeks after you submit your FAFSA, the processor will send you a Student Aid Report (SAR). The SAR will tell you your Expected Family Contribution (EFC)-how much your family is expected to pay toward the cost of college. Make sure the SAR is accurate, and then mail it to the college you plan to attend. If you need to make corrections to the SAR, return Part 2 of the SAR to the processor's address noted on the report.

Financial aid administrators at the colleges where you have been accepted will verify the information from your FAFSA, determine your aid eligibility, and then send you a financial aid awards letter. This letter will state the amount of aid for which you are eligible and the types of aid (grants, loans and/or work-study) that make up your aid package.

If you've been accepted at more than one college, compare the different schools' financial aid packages and academic programs to select the college that best meets your family's financial needs and your education goals. The Internet also provides some wonderful resources for financial aid such as the following:[17]

All Nations Alliance for Minority Participation contact:
http://skcweb.skc.edu/amp/index.html

American Indian College Fund contact:
http://www.collegefund.org

American Indian Higher Education Consortium (AIHEC) contact:
http://www.aihec.org

American Indian Science and Engineering Society (AISESnet) contact:
http://bioc02.uthscsa.edu/aisesnet.html

American Tuition Finance, Inc. (ATF) contact:
http://www.amf-inc.com/atf

AskERIC contact:
http://ericir.syr.edu/cgi-bin/markup_infoguides/CRESS/Indians_Alaska

College Board Online contact:
http://www.collegeboard.org

Financial Aid Information Page (Fin-Aid) contact:
http://www.finaid.org

Universities/Colleges/Scholarships/Aid contact The College Board: http://www.nhgs.tec.va.us/k12resources/college_info.html

Minority scholarships and fellowships contact:
http://web.fie.com/molis.scholar.htm

Native American schools, student groups, and related programs on the Internet, contact:
http://hanksville.phast.umass.edu/misc/NAschools.html

The Office of Indian Education Programs (OIEP) web site contact:
http://oiep.unm.edu/oiep/home.html

Research funding agencies in all fields of science and technology, contact:
http://www.cs.virginia.edu/~seas/resdev/sponsors.html

Department of Defense links for a variety of high school, college, and graduate level scholarships, apprenticeships, and fellowships efforts, contact:
http://www.acq.osd.mil/ddre/edugate/s-aindx.html

Scholarships and fellowships-both print and electronic formats-contact:
http://www.usc.edu/Library/Ref/Ethnic/scholarship.html

Student Services, Inc.-with more than 180,000 scholarships, grants, fellowships, and loans representing billions of dollars in private sector funding for college students living in the United States. Contact:
http://www.studentservices.com/search/

The College Power Prep presents resources-online college guidance, financial aid information, and other student resources-for planning your education contact:
http://www.powerpre.com

The Student Guide supplements a wide range of publications that are available upon request from the ED Office of Post secondary Education (OPE). Contact:
http://www.ed.gov/prog_info/SFA/StudentGuide/

I'm interested in summer internships. Is this something I should look for?

If you're able to get a summer internship with a professional organization in your area of study, this is highly recommended. Summer internships can provide you with practical experience in your field of study. Internships will also help you find and establish important mentor relationships with professionals in your chosen field.

If you're interested in applying for a summer internship, you must begin looking and planning for it at least six months in advance of your starting date. Check with your advisor and your department of study for information on the availability of summer internships in your field. You might also want to check with the university's employment office to see if summer internships are posted.

KEY POINTS:

* Not all financial aid must be paid back. Check on all sources and begin your financial aid planning one year before you actually plan to go through the admission process at your new transfer college.
* Your tribal office is one of the best sources of financial aid. You might want to start your search for financial assistance at your home agency.
* Be prepared to meet a variety of deadlines, don't assume that these deadlines are flexible, and don't assume that funding agencies will notify you of upcoming deadlines.
* Keep a file with all of your transfer information and copies of anything you submit to the financial aid office-financial aid, admissions information, your latest federal income tax information, etc.-in one place and make sure you can access this file at any time.

CHAPTER SUMMARY:

Sometimes, "touching the sky" isn't as easy as we think. This chapter is devoted to discussing the different types of financial aid, the procedures for filling out forms for financial aid, and even links to the Internet for finding financial aid (for those of you who can get to a computer). We again, suggest that you work with your two-year advisor and four-year advisor to get the help you'll need to forge on.

CHECKLISTS:

SOURCES OF FINANCIAL AID
Ask questions like:

1. Have I checked into my eligibility for the Federal Pell Grant?
2. Have I acquired the Free Application for Federal Student Aid from the appropriate agency?
3. Have I checked into my eligibility for college work-study programs?
4. Have I written the Bureau of Indian Affairs agency office (for my tribe) for tribal grants in aid?
5. Have I checked into the BIA /OIEP (Office of Indian Education Programs) to see if I qualify for these scholarships?
6. Have I checked with the Indian Health Service to see if I'm eligible for these scholarships?
7. Have I checked with the college or university I'm transferring to for any incentives they may offer Native students?
8. Have I written the Daughter's of the American Revolution well in advance of the deadlines to request the $500 in scholarship monies?
9. Have I checked with the Veteran's Administration to see if I'm eligible for financial assistance?

ACTIVITIES:

Using the Internet links cited in this chapter, please select two of the online addresses, contact them, and write up a report that can be shared with other students regarding financial aid information online.

CHAPTER SEVEN

TESTS, TESTS, AND MORE TESTS: COLLEGE ENTRANCE EXAMS AND YOU

Rose Alma is a Skokomish student at Northwest Indian College. She's recently decided that she'd like to go on to a four-year university to earn her Bachelor of Science degree in pharmacy but didn't take her college entrance exam in high school. She's looking for something to help her prepare for the test but she doesn't really know anything about what the test is-or how many tests she'll have to take..

Her community college advisor tells her to use her computer skills in identifying the entrance exams. Rose Alma finds the web site for The College Board and uses the free sample tests to begin practicing so that she'll be prepared when she has to take the exams.

Of the different college entrance exams available today, the two most popular are the SAT (Scholastic Assessment Tests) and the ACT exam. Both of these entrance exams have been used with a variety of students with different social and cultural backgrounds and are thought to be fair. You'll probably have to take one or the other of these exams-depending on the university you choose to attend and your planned major.

It is highly recommended that you take these tests in your junior or senior year of high school as the outcomes of these exams are one of the factors considered by many colleges in making placement and admissions decisions. The PSAT (Preliminary Scholastic Assessment Test) and the PACT (Preliminary) ACT are practice exams that can be taken as early as the eighth grade-and both are available on the Internet. The PSAT and PACT exams are also available to sophomores and juniors through their high schools.

If you plan to take either one of the exams during high school, here are some tips: In the fall of the 10th and 11th grades, you should let the teacher or guidance counselor know that you are interested in taking these tests. Teachers or guidance counselors receive the registration packets for college entrance tests in the fall. Registration deadlines are five to six weeks before the tests are to be taken. Keep in mind that tests can be taken more than once. By taking tests early during your high school careers, you can familiarize themselves with the structure and format of tests, gain valuable practice, and improve your test-taking skills.

What is the difference between the ACT and the SAT?

Both exams measure your ability to perform in higher education but the

SAT is generally geared to those students in the science, mathematics, engineering, and technology fields. Prior to the establishment of the ACT (formerly known as the American College Testing Program) in 1959, the SAT was the only nationwide college-entrance testing program. The SAT focused on identifying the very best students (as judged by verbal and mathematical aptitude) for admission to the nation's elite universities. The remainder of college students were often admitted on the basis of family ties, or through entrance exams offered by the individual institutions.

The ACT program evolved from the Iowa Tests of Educational Development at the University of Iowa and had a dual purpose: To help students make better decisions regarding their post-secondary education and to provide more information to the colleges. The colleges needed data that would be helpful to them in preparing their classes and curricula and, especially, in placing students in the appropriate courses of study.[18] You can reach the ACT program by "snail mail" by writing to: P.O. Box 168; Iowa City, IA 52243.

What is the SAT?

Since the Scholastic Assessment Tests (SAT) are more closely related to study in science and engineering, the rest of this section will deal with preparing for the SAT. The SAT stands for Scholastic Assessment Tests but used to be called Scholastic Achievement tests. There are two types of SAT exams-the SAT I: Reasoning Test and SAT II: Subject Test.

The SAT I tests more general reasoning abilities and is required by many accredited colleges and universities for admissions purposes. The SAT I is composed of mathematics and verbal sections and contains reading, analogies, and sentence completions on the verbal part. And the SAT I has no analytical sections-only verbal and math.

SAT II exams are achievement tests that test many areas like English, literature, biology, mathematics (different levels) and various foreign languages. These tests are designed to measure knowledge in specific subject areas and the ability to apply that knowledge. Both the SAT I and SAT II are primarily multiple choice exams. Both exams are offered at testing sites worldwide.

If you're preparing for transfer to a four-year institution, you should write or e-mail The College Board (http://www.collegeboard.org) to get free copies of "Taking the SAT," the student guides to the SAT exam. This guide has information regarding what is in the test, how to approach each kind of item, a sample test and answers, etc.

Is the SAT the same as it's been for the past few years?

There are two new parts to the SAT exams. The College Board is adding a writing skills component to the PSAT/NMSQT (Preliminary SAT/National Merit Scholarship Qualifying Test) for the October 1997 administrations.[19]

The second new addition, the SAT II, is a language test with listening added and is designed for Korean students. The new test measures listening and reading proficiency and familiarity with Korean grammar, structure, spelling and vocabulary, and is not tied to any particular textbook or method of instruction.

When should I take the exams?

Again, it's advisable to take the PSAT (Preliminary SAT) as early as the eighth grade or in your sophomore or junior year of high school. Then, you should probably take the actual SAT in the spring of your junior year of high school. If you have prepared and have done well, then that might be enough. If you haven't done as well as you should have, you can use the summer for more practice and then take the SAT again in the fall of your senior year. You need to know that taking the test again won't help much unless you've done some studying in between to help you prepare.

What are the dates/deadlines for taking the SAT?

You can find the national testing dates for taking the SAT through the Internet (http://www.collegeboard.org) or by writing the College Entrance Examination Board at Guidance Publishing, The College Board, 45 Columbus Avenue, New York, NY 10023-6992 (212-713-8000).

What kind of scores do I have to get to pass the SAT?

Scores on the SAT range from 200 to 800. You will receive two scores: one for your answers to the verbal questions and one for your answers to the mathematics questions. These scores range from 200 to 800, with 800 being the best score. If you don't answer any verbal questions, you automatically get a 200. The same is true for math questions.

You also get information that will help you understand how you did on each part of the test. For the verbal part, you'll find out how well you did on the three types of questions: analogies, sentence completions, and critical reading. For the math part, you will find out how you did in two

areas: arithmetic/algebraic reasoning and geometric reasoning. You will get more details on how to use this information when you receive your scorecard.

How are SAT II test scores used?

You can use Subject Test scores to show your mastery of knowledge and skills in a particular subject use the national percentiles presented with your scores to compare your performance with that of other college-bound students taking the test. Then decide if you need further preparation before taking the tests again.

Some colleges require Subject Tests for admission. Used in combination with other background information (your high school record, scores from other tests like the SAT I, teacher recommendations, etc.), they provide a dependable measure of your academic achievement and are a good predictor of future performance. Scores on the Subject Tests can help admission staff determine how well prepared you are for different programs of college study.

Some colleges also use the Subject Tests for placement and guidance. Scores may be used to place new students in freshman and higher level coursework (writing test, language tests, etc.). (Because the scores of Language Tests are not adjusted for years of study, colleges are advised to consider the preparation of individual students when evaluating their scores.) At other colleges, advisors use scores in guidance discussions to help incoming students select courses.

Many colleges that do not require Subject Tests will look at scores, if you provide them, to learn more about your academic background. For example, if you attend a very competitive high school where top grades are especially hard to obtain, Subject Test scores may help you demonstrate your achievements.

How does the SAT allow for student background differences?

The SAT II, or subject tests are particularly valuable in evaluating your command of a subject because they are independent of specific textbooks, grading procedures, and methods of instruction. The argument is that this allows for a comparison of students whose course preparation and backgrounds vary.

Who makes it through the SAT exam? What are the factors that increase the probability of success?

It is a fact that students who have taken more academic courses and who have earned good grades receive, on average, higher scores than students with fewer courses and lower grades. The strongest recommendation to you, then, is to take challenging academic courses and work hard. The SAT I: Reasoning Test is a test of general reasoning abilities developed over a long period of time. Hard work in demanding courses usually results in academic growth that is reflected in higher SAT I scores.

A 1985 study by the National Science Foundation's Committee on Equal Opportunities in Science and Engineering[20] was interested in why some high-ability-SAT scores of 550 or above-minority students made it through the study of science and others did not.

The study looked at approximately 5,000 American Indian, Black, Mexican American and Puerto Rican high school seniors who took the SAT in 1985 and attained the required SAT mathematical score. This group also indicated that they intended to enroll in college and to major in mathematics, science, engineering, premedical or pre-dental studies.

Analyses indicated that they were, indeed, an able group of young people (both mathematically and verbally), that they had high educational and occupational aspirations, and that they were all-around outstanding high school students. And approximately twice as many as in the general SAT population had taken honors or advanced courses in biology, mathematics and physical science and were expected to take advanced placement in the subjects in college.

This group of students also earned more credits than their college-bound classmates in mathematics, sciences, and foreign languages and had higher grade point averages. In comparison with other college-bound students in their own ethnic group, they were well off socio-economically-their parents had more education and higher incomes. But the minority students were less advantaged than all SAT-takers, of whom about 80 percent were white.

The study finds that at the high school level, what distinguished those students who made it through the science, mathematics, engineering, and technology majors was their greater participation in math and science clubs, in honors courses and advanced placement courses in math and science, and in science activities. These students also participated more in college-based minority science and engineering recruitment/enrichment programs.

Another finding: Students who also made it though the science and engineering fields reported that scientists and engineers they knew or knew about or met in summer jobs and part-time work, especially minority scientists and engineers, influenced their science and engineering plans.

Parents and friends were also highly important to making it through the science and engineering fields. These results strongly support the widely held belief in the importance of minority role models and points to summer jobs and part-time work as being especially important. The implication is that a primary goal of secondary school education should be to give all students opportunities to gain academic mastery-especially in science and mathematics-and to develop self-confidence and self-motivation.

What are some of the tips for studying for the SAT?

The key to your success-and lowering of anxiety-is foreknowledge and preparation. The more you know what to expect the better. Once you receive the PSAT free tests, you should study the directions, take part of an actual test, score yourself, put your scores on the scale, and then come up with reasonable goals for improvement. Remember that you should begin practicing taking the SAT test(s) early on so there's no rush right before you actually do take the test.

Develop a practice test-taking schedule because practice will help you get better and faster. If you score yourself, you'll know what you got wrong and where you'll have to do some work. Working in small groups is suggested. If you have access to English and math teachers, ask for their help in understanding what you got wrong on the practice tests.

For the verbal portion of the exam, you should read as often as possible-articles in newsmagazines and editorials. In the letters to the editor section of the paper, pick out some of the words used and find out what they mean (you might figure out meanings by looking at parts of words you are familiar with). If you still don't know a word's meaning, look it up in a dictionary.

Finally, you should dress comfortably for the exam, get enough sleep the night before taking the exam, come to the testing room early, bringing extra pencils, if appropriate, bring your calculator (this is not required) for the math sections.

If I'm interested in a medical degree, what should I know?

Medical school admission requirements vary from school to school. Each school's specific prerequisites are detailed in the Medical School Admission Requirements (MSAR), an annual publication of the Association of American Medical Colleges (AAMC) and is available at most school libraries and premedical advising offices.

Generally, most medical schools will expect you to have attempted the Medical College Admission Test (MCAT) and to have completed the following types of courses: One year of biology; one year of physics; one year of English; and two years of chemistry (through organic chemistry).

Students interested in medicine are encouraged to research the wide variety of jobs available in the health professions, to discuss the nature and demands of medicine with a pre-medical advisor or health professional, and to ask a lot of questions before embarking on the application process.

Are there different tests for medical college admission?

Yes. The Medical College Admission Test (MCAT) is a standardized, multiple-choice examination designed to assist admission committees in predicting which of their applicants will perform adequately in the medical school curriculum. The test assesses problem solving, critical thinking, and writing skills in addition to the examinee's knowledge of science concepts and principles prerequisite to the study of medicine. The MCAT is scored in each of the following areas: Verbal Reasoning, Physical Sciences, Writing Sample, and Biological Sciences.[21]

KEY POINTS:

* Preliminary practice exams for the SAT I and II are available to you during your early years in high school.
* You'll need to check with your transfer college to see what entrance exam the school requires.
* Students who have taken more academic courses and who have earned good grades receive, on average, higher scores on the college entrance exams than students with fewer courses and lower grades.
* Medical school admission requirements vary from school to school but there is a publication, the Medical School Admissions Requirements, that spells out each medical school's requirements.
* Don't be discouraged if your scores are low. Practice and study will increase your scores and these exams are only one factor used to determine college entrance.

CHAPTER SUMMARY:

The title of this chapter sums up how many of us feel when we're preparing to make a move to something new. Hopefully, though, this chapter also provides you with tips and steps to make the test-taking experience a little easier. The two most popular college entrance exams-SAT and ACT-are addressed. More thorough discussion is provided for the SAT, which is the test many of you'll have to take to get into your majors.

CHECKLISTS:

PREPARATION FOR THE COLLEGE ENTRANCE EXAMS
Ask questions like:

1. Have I studied for the entrance exam over a long period of time rather than cramming" the night before?
2. Have I read or listened carefully to all the test-taking directions and asked questions about those directions that were not clear?
3. Am I getting enough rest during the few months preceding the test and, especially the night before I take the test?
4. Have I made plans to eat a good breakfast the morning of the test?
5. Am I committed to doing the best I possibly can on the test?
6. Have I involved my family and my two-year advisor in my college entrance exam preparation?
7. Am I prepared to challenge my test scores if I don't agree?
8. Have I taken the practice tests for the SAT (PSAT) or the ACT (PACT) as early as possible but before my junior year in high school?

CHAPTER EIGHT

"CLIMATES" ON CAMPUS: CHOOSING THE RIGHT COLLEGE FOR YOU

Though it may not seem to be as important as other factors that influence success in higher education, a 1985 National Science Foundation study[22] finds the climate of undergraduate work to be of critical importance "especially the quality of instruction in first-year math and science courses." This means that the campus climate of your new university will be very important.

Since you'll be transferring from a two-year tribal or community college, you'll probably take your first-year math and sciences courses at the two-year college. But if your first two years haven't included math and science courses, you will have to take these at the four-year institution.

What do you mean, "climates" on campus?

This phrase does have to do with the "hot" and "cold" environments of different campuses. But not in the same sense that scientists deal with these "temperatures." When you arrive on a campus, you'll get a feeling of warmth, acceptance, challenge-or you'll get feelings of isolation, frustration, and defeat. Of course, there are feelings in between but the "climate" you're looking for is one where you feel that there is tolerance and acceptance.

Many studies point to the idea that students, especially transfer students who are used to the giving and caring environment of the community college, have a very hard time on the four-year university campus if they don't know what to expect.

We've mentioned this before in this publication but the four-year institution is generally much larger than the two-year campus. Faculty and staff on the four-year institution tend to see students-simply because of the number of students they have to deal with-as numbers. There's an impersonal nature inherent in the four-year campus environment. That's what transfer students must anticipate and be prepared for before they arrive on the four-year campus.

How does the "climate" on campus determine whether students graduate?

A simple example of how climates-anywhere-impact us is illustrated in the following story about a Salish fellow named Patrick.

Iris was reared in a small reservation town in Montana and was a member of the Confederated Salish and Kootenai tribes. Discrimination against Native Americans was something that every Native student had experienced so Iris coped with it.

Iris earned her Associate of Science degree from Salish Kootenai College and decided to go on to the four-year institution to earn her degree in Biophysics. She was a curious, quantitative thinker who loved puzzles and always tried to figure them out.

Iris thought that once she had transferred to the four-year university, the racism and intolerance she'd experienced growing up would be left behind. Her thinking: more education should do away with discrimination. She soon experienced that, due to the political environment of the country, the whole idea of being a member of a "minority group" had negative aspects.

Thankfully, Iris went to a school where there were many clubs, associations, and classes designed to get rid of intolerance. She excelled in her biophysics studies and now works with a corporation that manufactures health products.

Of critical importance, then, is the idea that the education climate of undergraduate schools and especially the quality of instruction in first-year math and science courses be excellent. If you happen to be one of those fortunate students who are transferring from tribal community colleges, you've received that excellent education. The bottom line: carefully investigate the educational climate of the colleges you're thinking about enrolling in. After all, you're the consumer.

How do I identify the "climate" on a campus I'm interested in attending?

You'll have to do some research. First, you should talk to your advisor or other students who have gone to the university in question. Find out what the Native American clubs-scholarly and social-are and contact the Native American studies office. Then, find out how many Indian students have enrolled in-and graduated from-the university. If very few have graduated (high dropout rate), you should be tipped off that this might not be the institution for you.

Next, check out the faculty. Faculty members are driven to publish articles. Just go to the library and look up some of their publications. You can read them via computers set up in the library. If there are certain faculty members that interest you, make an appointment to meet with

them. This may seem a bit bold but after all, you're the one who's interested in getting the most out of your education! Then make your decision. You're entitled to the best higher education experience that you can have-and it's your decision.

Is the university responsible for creating positive climates?

The simple answer is yes. But all universities claim that the climate on their campus is positive and respects diversity of all groups. This is not the case. One easy way to see whether the university is sincere in their efforts to bar any discrimination is to look at the university's positions on:

Recruitment efforts-does the university actively seek underrepresented students? This question should be fairly simple to answer. Talk to your friends or talk to a professional person in science and engineering and ask what they think about the university.

Fellowships and assistantships-does the university offer fellowships and assistantships in your field? Does the university's fellowship application identify the lack of minority students in the field? Does it promote a fair rating system for all applicants? The answers to these questions should be "yes."

Academic and social support-Look at the catalog for the university. Activities and presentations should be balanced. Do you see departments and campus activities that you'd be interested in attending? It should reflect a balanced offering of activities that include all groups on campus.

Atmosphere of expected success-what is the tone of the catalog? Is it highly competitive where students will be pitted against one another? Or, is it respectable where there is an expectation that all students will succeed with hard work?

Communities of color-how many cultural groups are represented on campus? Is there a little bit of something for everyone? Is it skewed to one group or another? The bottom line, of course, is whether you'll be able to grow-rather than be stifled-in the environment that's offered by the university.

Faculty mentoring-does the university you're interested in have a section on faculty mentoring in the catalog? If not, can you find something in the department/field that will ensure you that you're not on your own? In

this case, the label of minority does not matter. Universities should offer those clients that attend the university support and direction.

Diversity in the curriculum-take a look at the whole catalog not just your area of specialization. There should be courses offered in each department that reflects the diversity of the American society. If not, look elsewhere.

A critical mass of minority students and faculty-finally, take a look at the overview section of the catalog to see if there's been progress in graduating people of color. If not, look elsewhere.[23]

How do Indian studies programs/clubs enter in to the climate?

Indian clubs and activities are an extremely important part of the higher education experience. As a student, you'll find that other Indian students have experienced what you're experiencing. Maybe it won't be in the same field but to have the opportunity to share with other students and know that they're going through the same thing will help you. Study groups are great!

I hear a lot about "culture shock" and it scares me. What exactly is it?

This idea assumes that when students-especially tribal and community college students-arrive on the four-year campus, they encounter radically different environments. Many students aren't prepared for the competitive, aggressive atmosphere, or for the intolerance for cultural differences of the four-year college campus. As a result, many transfer students complain of feelings of discomfort, loneliness, and isolation when coming to the four-year campus.

You can overcome these negative feelings by anticipating the changes you'll experience. If you've attended a tribal or community college, chances are that you'll take a transfer course that will include information on preparing yourself for encountering culture shock. If you have the chance, take a course like this and ask questions about things you don't understand-even if the topics are sensitive ones.

You'll also have to develop an understanding of the four-year university as a very large, mixing pot of different cultural and social groups and be willing to learn about it. Most people who ask questions related to cultures different from their own are really interested in finding out the answers. These people ask questions because they don't know the answers. If you're asked an uncomfortable question about your culture-and feel

comfortable answering it-you should. If not, you don't have to respond-and you shouldn't feel uncomfortable doing this.

I know college is the time to drink. If I don't want to, what are the options for living in an alcohol and drug-free environment?

This issue is getting to be a big one in higher education. There are more and more students who prefer to place their higher education focus on achieving in their studies. These students don't want to be around drinkers during their college days. And many four-year universities are beginning to offer sober housing on campus for these students.[24] You'll have to check with your new campus' student housing to see if this option is offered.

KEY POINTS:

* Anticipate and be prepared to encounter a different cultural and social environment from the two-year college you're used to.
* In selecting your transfer college, remember that the quality of the "climate" on campus is one of the most important factors in determining whether you'll stay on campus and graduate.
* Remember that you have a right to a quality education. Speak up if you think you're not getting that education and be prepared to defend your position. Working with Native American clubs on campus may help here.
* The idea of sober living is getting to be quite popular on campuses across the country. If you're interested, check with the housing office on your new campus to see if you can participate.

CHAPTER SUMMARY:

If you really think about it, campus climate-whether it's a tribal community college or a large four-year institution-is probably the most important reason why students stay or leave. We examine campus climate in this chapter and offer several criteria for you to judge the university you'll be transferring to. Remember, you're the consumer of knowledge.

CHECKLISTS:

DETERMINING THE CLIMATE ON CAMPUS
Ask questions like:

1. Have I asked my two-year advisor about the transfer university I'm considering?
2. Have I asked my friends who've gone to the transfer university I'm considering about the climate on campus?
3. Have I contacted the Native American studies office at the new campus to see how many Native students have enrolled-and graduated-from the major I'm interested in?
4. Have I checked out the faculty publications for faculty members I'll be taking classes from?

DETERMINING THE UNIVERSITY'S COMMITMENT TO POSITIVE CAMPUS CLIMATE
Ask questions like:

1. Does the university seek underrepresented students?
2. Does the university offer scholarships and assistantships in your field of study?
3. Does the university catalog include a balanced representation of activities on campus for all groups on campus?
4. Does the university catalog stress competition among students?
5. How many cultural groups are represented on campus?
6. Is mentoring directly mentioned in the catalog or the department description?
7. Does the catalog represent coursework-even outside of your field-that reflects all aspects of American society?
8. Does the overview section of the catalog state progress in the graduation of people of color?

CHAPTER NINE

CLASSES, PARKING, AND STUDENT CARDS: THE REGISTRATION PROCESS

By the time you've gotten to registration, you've probably already moved into your dorm room or off-campus apartment and spent a few days around campus. You might be surprised at how stressful the actual registration process is.

Martin is a member of the Onandaga Nation from New York State. He's applied and been accepted to the University of Wisconsin at Madison to study agricultural engineering. Martin attended Sinte Gleska University before he transferred to the U of W so he thinks he's pretty well acquainted with what to expect during the registration process.

He's been assigned an 8:00 a.m. registration time but was unpacking all night and meeting new friends in his dormitory. He slept in until 9:30 then went to the registration site thinking that he'd just whiz through the process like he did at the tribal university. Martin found that the lines for registration were packed. Had he arrived at the right time, he may have had an easier time of it.

Martin didn't get all of the classes he needed for his first-term as an agricultural engineering major. Not all was lost though, Martin took a racket ball class and found out he was actually very good at that sport. When he got stressed out from the demanding class schedule he had, his racket ball class helped him relax.

When I get to campus, what should I know about registering for classes?

The key to lessening anxiety about registration is to be prepared. Well before you actually set foot on campus, you and your follow-through advisor from your two-year institution should discuss your first few days on campus. If you do this, you'll know that registering for classes, getting your parking assignment, and getting your student identification card is a step-by-step process. It's often confusing and frustrating but help is available.

During your first few days at the new university, call the Native American center on campus, find out if there's a Native American Studies Department, and read the local-or better yet if it's available-the campus newspaper. Registration-schedule of classes, fee payment information, and deadlines-is often spelled out in these publications.

Your follow-through advisor will also tell you to see your academic advisor on campus as soon as possible. Academic advisors usually provide a

student data form that must be completed and signed by your academic advisor before you can register for any classes.

At the time of registration, ask for help from any one of the university officials present at the registration site-asking for help is the key to registration success. The registration process usually includes the following steps:

Registration. You register, usually alphabetically or by birth date, at a specific time and place at the registration cite. Registration packets are provided to you at that time.

Tuition and expenses. You have to pay your tuition and other expenses. If you're receiving financial aid, your registration packet should indicate that and you should not have to pay any out-of-pocket expenses for tuition (and usually fees).

Parking permits. You have to get your parking permit and any campus stickers that will enable you to be on campus without paying visitor's fees.

Class selection. You'll have to register for classes-you should have planned well in advance for your preferred and alternative classes.

Join clubs. At most universities, there are booths for clubs and associations on campus. You'll have the opportunity to sign up for membership in these or just get information about your options.

Picture identification card. A picture identification card will be prepared for you at this time.

Free coupons for great college stuff. You'll probably also get some "free" or discount coupons for use on and off campus. These coupons may include food, clothing, and school supplies.

After the first semester starts, it is your responsibility to know when it is time to register for the next semester. No one will write. Stay in touch with the Indian club advisor and read the newspaper, which will list registration dates and the new schedule of classes.

During your first term on campus, you'll be able to plan a tentative course schedule-include alternative classes – for the following semesters. Listen to what other students say about courses. *Pay attention to what students have to say about the faculty member* who teaches the course, how

much work is required to get a good grade in the course, and their general satisfaction with the course.

What resources should I know to help me get to know my way around campus?

The first resource you should identify is the Native American center on campus. You'll find other tribal college students there who've probably been through the transfer process-they'll be able to help you get through it smoothly. Then find your advisor's office and make an appointment to see him/her as soon as possible.

You'll need to find out where the student activity center is. The cafeteria is usually located in this building so this will have to be one of your first stops. The student activity center is the "hub" for students and usually has the student book store and meeting rooms for student gatherings.

How should I select my courses?

See your academic advisor to select appropriate courses for your major (your follow through advisor from the tribal college should be able to provide you with help here-perhaps you could go over an earlier university class schedule with your community college advisor prior to leaving the tribal college. This will help you know what type of classes to look for).

Few students get all the courses they want but every course you take should meet some requirement for graduation. The Native American Studies program at Montana State University in Bozeman[25] provides the following tips on course selection:

* Balance your selection of courses to include a variety of subject matter.
* A class schedule should provide a challenge to you but should not be overwhelming. You need to consider job, family, sports, and non-academic activities in your planning.
* 12 Credits are usually required for full-time student status and financial aid eligibility. But this may differ from institution to institution. Check with your advisor.
* Look for course sequence and prerequisites. In other words, don't try to register for a 400-level course when you haven't taken the required 200 and 300 level prerequisites. This will save you time and frustration.
* Plan ahead! Right around the middle of the term, courses for the upcoming semester are published in the paper.

You'll also need to decide whether you'll be attending most of your classes during the morning, afternoon, or evening (sometimes the class schedule does not allow for this flexibility). If you have the option of determining when you'll take the majority of your classes, base your decision on whether you're up at the crack of dawn-a morning person-or like to stay up late-an evening person.

Should I take the classes where I know other Indian students?

In science and engineering classes, chances are that most of the other students will not be Native American. If you know of classes that other Indian students enroll in-and those classes will apply to your graduation-take the class. It's always nice to be able to form study groups with your peers.

Remember, when you actually go into the class, don't find a seat at the back of the classroom. Move to the front where you'll be able to hear better and be more involved in classroom activities.

KEY POINTS:

* Begin planning for the registration process with your two-year follow-through advisor well in advance of registration time.
* When you get to campus, get a copy of the student newspaper or the college catalog immediately. Registration information-deadlines, fees, etc.-for the next semester will be printed in the student newspaper or posted at the Native American student office about the middle of your current term. Keep on top of the deadlines and meet them.
* Develop a tentative course schedule with your tribal college advisor before you get to campus-just in case some of the courses you and your advisor planned for you to take aren't available.
* With the help of you family and two-year advisor, you should determine when you perform at your best-then try to schedule your classes around your "peak" hours (early morning, mid-day, late afternoon, or evening classes).
* Be sure to listen to what other students have to say about professors and courses.

CHAPTER SUMMARY:

You've heard the term, "stressed out"? Well that's what this chapter deals with as far as actually getting to the four-year campus of your choice and making your presence a reality. We've looked at what you need to know

about registration, resources available on campus for you, and how to select-and plan for alternate-courses. The rest is up to you.

CHECKLISTS:

A FEW DAYS BEFORE REGISTRATION
Ask questions like:

1 Have I allowed enough time to get up, shower, eat, and get to the registration site on time?
2. Have I identified when and where I'm supposed to register for classes?
3. Do I have all of the registration materials I'll need-my tuition and fees payments, photo identification, etc.-in my backpack or notepad?
4. Have I gotten enough rest and eaten good meals the few days preceding my registration?
5. Do I have alternative classes selected in case the classes I'll need to take are full?
6. Do I know where the bookstore is and do I have my checkbook with me?
7. Have I planned for some personal time to spend with family and friends?

ACTIVITIES:

Get together with the Native student club or just a few friends on campus and have lunch or a picnic. During this time, take the lead and role-play what you expect your registration experience to be. There will have to be the following roles: the registrar, the student, a campus security officer, and a family member. Anticipate any and all problems-or successes-that may occur. Discuss the experience with one another and other students who are planning to transfer. Try to be as comprehensive as you can regarding this role-play experience.

CHAPTER TEN

THE IMPORTANCE OF COMMUNICATION: IT'S NOT ALL TALK!

Rosalee is an Ojibwe student from Minnesota and attended the Leech Lake Community College. She took her first two years of general education at the community college and is now ready to transfer to South Dakota State University. Rosalee wants to major in statistics and work with government statistical agencies.

Rosalee is quiet and prefers to keep to herself but she's heard that the four-year university doesn't understand this. She's concerned that she'll have to give oral presentations and write papers-just to get through some of the courses. Rosalee doesn't think this is fair but she's willing to learn-and excel-in writing and speaking.

Fortunately, Rosalee knows that there are several speech debates for Native students throughout the year. She plans on taking a few courses in communication and working them into her program of study. Her long-range goal is to overcome her shyness and to share her growth with other students and faculty at SDSU.

Rosalee's fears of public speaking and writing are not unique. One of the most frequent complaints of college students from all cultural backgrounds is the idea that speaking and writing are so highly valued by higher education institutions. What is more upsetting to most undergraduate students is the idea that communication skills really define grades and measure how you tell others what you're thinking.

The fact is that the ability to communicate your ideas in a clear and concise manner is imperative if you are to succeed in all aspects of today's society. If you think about it, it makes sense.

Why does this society place such value on effective communication?

Have you ever been on a busy street and met strangers along the way? There is no way not to communicate. Even silence is a form of communication. It means different things to different people. If you're walking along and you say "hello" to someone (a stranger) who looks friendly and that person doesn't respond-what do you think they' re saying to you?

In higher education it's assumed that students who are interested in course matter will speak up, get involved in class activities, and ask questions. If a student is silent, the professor may read that silence as disinterest in the class. And grading may reflect the professor's assessment.

The whole idea of communication is so confusing, what does "communication" mean?

Communication takes a variety of forms like verbal, written, and nonverbal. There are also fields in communication that study how people communicate with one another (interpersonal communication), how communication is accomplished in organizations (organizational communication), and how people from different cultures communicate with one another (intercultural communication). The good news is that most colleges, two- and four-year, offer courses in all these different kinds of human communication.

The most important point, though, is that our cultures tell us how to respond to other people: When we speak with other people we generally know which words to use-whether silence will communicate what we'd like-whether we use our Native tongue, and when to use specific words. We can tell how the other person is feeling by the way that person acts. But we can also communicate with other people through body language-eye contact, for example. In many cultures, eye contact is a necessary ingredient in an "honest" discussion. This is particularly true in North American business.

My culture isn't strong on written communication. Why do I have to practice these to achieve in higher education? It doesn't seem fair.

Everyone in this world relies on communication-written and oral-every single day. In fact, history has been determined by what people have recorded with ink and pen. Written communication is how we learn and grow. Today we have electronic communication and Americans of Native descent communicate their life experiences and record the richness-sometimes horror-of their lives as Native peoples. If Native people did not write, history would continue to be recorded from those eyes that could-non-Indian observers.

I'd like to get my degree but I just don't want to put up with how different these students are from me. What can I do?

This brings up the study of intercultural communication-or how cultures communicate with one another. This is a great field because many of you will be working and living in a non-Indian environment when you graduate or transfer from your two-year college. A good way of viewing intercultural differences is to see people from different cultures as strangers-the same way they may view you.

The bottom line: A basic human characteristic is to try to categorize everything-human and non-human-into some sort of category, in order to make sense of it. Categorizing people is just as easy. It helps us-no matter what our cultural background is-to not have to deal with the differences (skin color, facial features, and even body styles). You've all heard it: stereotyping.

Stereotyping is convenient-advertisers use it all the time-because it makes it easier for us to dismiss things that are different or new to us. In other words, we don't have to understand something if we've already got a preconceived notion about it. Cultures have unique practices and beliefs that hold members of a culture together. But to a non-member of that culture, these practices and beliefs might seem strange. Rather than trying to understand and accept the differences among people, stereotypes are formed about cultures.

What can I do to fight the stereotypes?

It shouldn't be your primary concern when you transfer to the four-year university but here are a few tips: reach out and try to understand that students, staff, or faculty members who are seeking information are doing it because they're genuinely interested. They really don't know about your culture. That's not to say that you can't ask them about their cultures and possibly share with them how strange you think their cultures may be.

Why is communication so important in science and engineering?

You think that going into science, mathematics, engineering, and technology might hide you from the demands of communication? Not so, scientists and engineers constantly communicate with all kinds of people, including graduate students. Many people think that working in science and engineering fields means that you'll be put in a laboratory somewhere and you won't have to deal with other people much. Nothing can be further from the truth. Scientists and engineers are constantly in communication with a variety of people-from office staff to professionals in different countries-and scientists and engineers are expected to communicate new findings and understand new findings of others.

Students in science, mathematics, engineering, and technology must be good communicators. Students must be able to communicate their needs and wants to advisors, teachers, and other students. Whether you work in academe, industry, business, with your tribe, or the government, good communication skills are necessary.

How can I accomplish improving my communication skills through the coursework?

In every class you take in higher education, you should try to write papers, give oral presentations-individually or with others through panel discussions-and speak up in class by asking questions. Since you'll be taking a lot of lecture and laboratory classes, you should have plenty of opportunity to do all of the above. You might also see your advisor regularly and work on communicating your needs to him/her.

Does every university and college place an emphasis on communication skills?

The short answer is yes. All aspects of society hold good communicators-writing and speaking-in high regard. Even the admissions tests that students have to take (SAT I, SAT II, and the ACT) to get into higher education have writing components to them. The reason is that no one can succeed or excel in anything unless they can communicate their expertise in one subject or another.

During your university experience you'll be required to write papers (research, concept, etc.) and give several oral presentations. If you've attended one of the tribal colleges, chances are that you've already had to make oral presentations. In fact, the 1997 American Indian Higher Education Consortium conference included a speech debate contest where many students from all over the country presented original speeches and had them judged by a panel of experts.

What if I'm shy and don't want to stand up in front of anyone? Are there any tips?

Most people who give an oral presentation for the first time are nervous and unsure of themselves. The truth of the matter is that people in the audience are interested in what you have to say. Every individual has a unique background; your experiences are probably very different from other people-and you probably see things differently than others-share your knowledge.

If you need some practical tips on giving oral presentations, a few are listed below:

1. If eye contact bothers you, look at the eyebrows of the audience members when you give your oral presentation.
2. Pick topics or issues that you're interested in and share that interest with the audience. Imagine that you're one of the audience members. What would you like to know about your topic?

3. Try not to read your presentation though some courses will require you to do this. Always know your subject matter thoroughly and if you're asked a question and don't know the answer then, research it and report your findings later.
4. Wear comfortable clothing so that you're not concentrating on how you feel. Always concentrate on your subject matter.
5. Give your presentation to a friend or a group at the Native American center on campus and ask for honest feedback. This will help put you at ease for the "real" presentation and give your group members some information that they might never otherwise hear.

Written presentations should include the above considerations as well (with the exception of eye contact and clothing). When writing a paper, you should always think about what the reader will want to know and will find interesting in your paper. The next chapter offers a discussion of research and research papers.

How will this apply once I've graduated and gone into the workforce?

If you're experienced in giving presentations during college, chances are that when you enter the workforce that experience will kick in. In any case, being a good speaker cannot hurt you. When you apply for a job and get an interview, communication skills are very important. You never have a second chance to make a good first impression.

Research[26] shows that within the first four minutes of meeting another person, first impressions-tentative judgements-are formed. That is, we decide whether the other person is intelligent, honest, etc. We also decide whether we want to continue communicating with them. We have to remember though, that the other person is forming the same judgements of us.

When you graduate with your bachelor's degree in science, mathematics, engineering, or technology, you might as well face the idea that first impressions are very important. Take the opportunity to practice your communication skills while you're still in school. Then, use what you've learned to enter the job market.

KEY POINTS:

* Everyone-from student to businessperson-has fought with the idea of speaking and writing. But communication is the most important skill for success in the American society.
* Stereotyping is the easiest thing we can do-it takes hard work to understand and accept people and their differences.
* There are many different kinds of communication-all different types summarize who you are and what your background is.

* You cannot, not communicate. Even silence is a form of communication.

CHAPTER SUMMARY:

Whether we want to or not, we are constantly communicating something to someone. This chapter's message is that we must be aware of what we're communicating, practice communicating what we'd like to communicate, and take what we've learned from our higher education experience into the workplace. The importance of being able to communicate effectively is evident in the classroom and later, when you join the workforce. This chapter explores what communication is and why communication is so highly valued by the American society and its institutions.

CHECKLISTS:

INCORPORATING COMMUNICATION COURSES/SKILLS

Ask questions like:

1. Have I checked into taking a few communication courses when I transfer to the four-year university?
2. If I've already had communication courses at the tribal college, am I sure they'll transfer to my new college?
3. Am I committed to trying to improve my communication skills when I go to the four-year university?
4. Am I committed to doing the best I can do in my college communication courses so that I can apply what I've learned to the job search?
5. In giving speeches and writing papers, have I thought of subjects or methods that may help me once I graduate?
6. Do I realize that people in the audience-whether it's a college course or a business meeting-are interested in what I have to say?

ACTIVITIES:

The next time you're in an elevator on campus, rather than standing with everyone else on the elevator and looking at the numbers for the floors, turn around and face the people in the elevator. Then, record your observations. What do you notice about eye contact? What do you notice about body language? Do you feel comfortable looking at the people in the elevator? Do they feel comfortable looking at you? Notice that there is no speaking but there IS communication. Then discuss your findings with other students and come up with similar exercises that deal with verbal communication.

CHAPTER ELEVEN

POSING AND ANSWERING QUESTIONS: THE IMPORTANCE OF RESEARCH

Wayne (Navajo) is a second-semester transfer student at the University of Wisconsin at Madison. He's enrolled in zoology courses and wants to get his bachelor's degree and work as a research assistant for his tribe. Wayne's main interest is in bridging the scientific study of zoology with his cultural understanding of living organisms in the animal kingdom..

Wayne has written several research papers for different faculty during his first semester at UW. Though he did get a paper published while he was a student at Din'e College, his papers at UW have been returned to him because he did not follow the scientific guidelines.

Wayne is perplexed because he knows more about his tribe's cultural understanding of zoology than his professors do. The good news: Wayne meets with his professors, discusses his concerns, and agrees to use a research guide in writing future papers.

If you're one of the fortunate 25,000 students who have attended a tribal community college, the importance of research may have been pointed out-if not required-during your studies. Many of the 31 tribal colleges demand at least one research paper by the end of the two-year degree. This is "because we believe that learning the dos and don'ts of research is a prerequisite to any field of advanced study," says Joe McDonald, president of the Salish Kootenai College in Pablo, Montana. "We try to help the students prepare for the four-year experience."

What should I do to begin preparing for doing research?

It's no secret that the four-year institutions, especially in the fields of science, engineering, mathematics, and technology, require several research projects or papers by the end of a student's degree program. Here are a few steps you should take to begin preparing yourself.

First, you should conduct a research project-with another student or instructor-while you're enrolled at a community college. Or, if you're still in high school, you may want to offer to do the first few steps of a research project or paper in one of the courses you like. Research doesn't have to be done in a laboratory setting; you might want to turn a field trip into a research experience. Check with your instructor.

If you're graduating from high school or the community college soon, you've still got many chances to learn and share the research experience. The very process of selecting a four-year university or college that you'd like to attend will require research on your part. The research you'll do when looking for a university is just the tip of the iceberg. First, you'll have to collect your data by identifying different schools you'd like to attend, weigh the pros and cons of each school, and follow through on the application and admissions process at the schools of your choosing.

Once you get to the four-year institution and have registered for classes, the decision of conducting research projects is really up to the instructor of each course. Since you'll be involved in science, mathematics, engineering, or technology, chances are very strong that you'll begin doing research during your first term of your sophomore year.

How do I choose a research topic?

In choosing a research topic, you must know what your real interests are. Few people can do good research if they're not interested in the subject or topic of the research. It's a good idea to conduct research that will help someone or something. For example, many tribal college transfer students have a good understanding of what their respective tribe might need in the research arena. That is, research dealing with how to manage livestock and poultry (animal science) or research that tries to answer questions in the treatment of diabetes (clinical laboratory science). Also, applied projects-water use, water and soil testing, gardening, feasibility studies regarding land use for various agricultural projects-are appropriate projects for you as an undergraduate student.

If you happen to be a member of the American Indian Science and Engineering Society (AISES), you may become involved in special projects that include the AISES Environmental Institute in the Colorado Rocky Mountains. This environmental institute is where groups of Indian students and teachers learn traditional Indian agriculture and science as well as modern technological approaches to solving environmental problems. AISES also sponsors the Traditional Knowledge Conference Series, where elders and traditional knowledge keepers throughout North America share and disseminate their understanding of the natural world.

Select research topics that are of interest to you and that will be beneficial to others. This is not to say that your research will change the world. The point you should strive for is to start-as soon as possible-to build a solid foundation for your future research endeavors, even if you don't plan to go on to graduate school. Finally, know that you need to work with your advisor or faculty member in the design and development of

your research project. There are specific rules for conducting research and your should follow those.

What is research?

Research is defined as "careful, systematic study and investigation in some field of knowledge.[27] Research may be either quantitative (measurable) or qualitative (immeasurable) and there are critics on both sides. In the sciences though, the quantitative is usually the rule. Exceptions may include papers that deal with topics like what the relationship between science and American Indian tradition is, or how mathematics has been and is a part of Native traditional life, or what the engineering problems were that traditional people overcame.

There are a few tips on pursuing research topics that are worthy of mention here. The first is to check with your tribe to see what area(s) of research they'd like to have done. This is very important because tribal officials will have to hire someone to study and investigate issues that you may be more familiar with than non-tribal members. If your study answers the needs of your tribe, you'll be giving back to your tribe and helping yourself earn a degree in higher education at the same time. It's also important to offer to provide the tribe with a copy of your research paper so that the findings can be used in a timely manner.

How do I communicate with faculty members about my research interests?

Once you identify the topic or issue that you'd like to pursue, contact the professor of the course that requires the research paper/project. Most of the time, faculty members are very willing to allow a student to pursue a research project that is interesting and important to them. Who knows, you may even get the faculty person to collaborate on the research with you! You may become published as an undergraduate.

Once you've explained your research interest to your faculty member, he/she should help you develop a research question and design a research project that will pull the information you're seeking together and allow you to measure the accuracy and replicability of your findings. One requirement of most research is to make sure that the results you get will be able to be picked up by another researcher and taken further.

How do other students enter in?

Another excellent source for conducting research is other students. Many times the whole thought of research is a scary one and many students

don't have the benefit of tribal feedback to help them. In this case, you can exercise your academic as well as leadership skills and invite them to work with you in conducting your research. Many faculty members are receptive to collaborative research and different perspectives on research questions and outcomes can only help to improve the whole experience.

There are also many different types of research handbooks for students and most faculty members have a preference as to which guide to use. The Modern Language Association, for example, publishes the "MLA Handbook for Writers of Research Papers."[28] But there are many other research guides available to you-just ask your advisor or faculty member for help.

What if I see research in science, mathematics, engineering, and technology as boring?

Then you've probably got to analyze your reasons for pursuing degrees in these fields. Most of the topics in science, mathematics, engineering, and technology are very interesting. The key is to learn the field and tap into what interests you. Then you must pursue research questions that will answer your interests.

What if I don't see myself going into an advanced degree program at this time? Why would I need research?

Being able to conduct even basic research is a prerequisite to almost anything worth doing today. Many students in science, mathematics, engineering, and technology are placed in lucrative employment positions right after the receipt of the bachelor's degree. It used to be that these fields were reserved primarily for advanced study and for those persons who wanted to teach and conduct research in academe. But today, undergraduate degrees in science, mathematics, engineering, and technology bring employment opportunities in government, business, industry, tribal communities, and academe.

For example, a 1995 survey by the American Institute of Chemical Engineers[29] reports that industry grabbed 51.3 percent of the graduates with a Bachelor of Science degree in chemical engineering. Graduate school took another 15.9 percent of those graduates and government took 1.9 percent of the undergraduates with a Bachelor of Science degree.

This same study provides for a breakdown of industrial employment for Bachelor of Science chemical engineer graduates with chemical industries placing 31.4 percent of the graduates. Another 12 percent went to other industry and 10.0 percent of the BS graduates were employed in the food/consumer products industry.

The knowledge of how to do research in these fields becomes invaluable when you consider the above survey. Even if you don't go into industry or academe, being able to understand and interpret research results will put you further ahead of others in your field.

Should I try to be published as an undergraduate?

Being published as an undergraduate is exciting and may well set you for a position in academe. But being published is not an easy task-even for faculty. What you have to consider here is that publishing cannot become your overriding concern. Whether your work is published or not, your research topic/area should be of interest to you and of practical application to others.

Where does my advisor enter in as far as mentoring and research?

Ideally, you should try to maintain contact with your community college advisor. Chances are that your community college advisor knows you, is aware of your capabilities, and is supportive of your efforts. If you've worked well with your advisor during your two-year college experience, you should try to involve your community college advisor in your work at the four-year institution. It isn't unheard of that your community college advisor and your four-year college advisor collaborate on research with you.

If you've cemented a good relationship with your four-year college advisor, yes, that advisor could be involved with your research (if you're not happy with your four-year college advisor, you can request another advisor; academic advisors can change). The beginning of your research experience may well be the careful and systematic study and investigation of the four-year college you'll be transferring to. Your advisor should be involved in this decision and should help you make an informed choice about where you'd like to go to school and how advanced you'd like your study to be.

KEY POINTS:

* Your community college advisor should be involved in your "research" for the transfer college as well as actual research topics/papers during your four-year university experience.
* Other students may well serve as collaborators in your research. Be sure to check with the instructor of the class you'll be doing the research for.
* There is a research methodology that you'll have to know and use in doing your research. Check with your faculty member or advisor to get a copy of research guides.
* In defining your research topic, you may want to contact your tribe to see what areas your tribe needs research done.

CHAPTER SUMMARY:

Chapter XI looks at research-an overlooked, yet extremely important-component of the undergraduate experience. Tips on defining areas of research and carrying out the research are provided in this chapter.

CHECKLISTS:

PREPARING TO CONDUCT RESEARCH:
Ask questions like:
1. Have I acquired a research manual or guide to help me in writing a research paper?
2. Have I tried to do practice research with other students in my field?
3. Have I checked with my tribe to see what the research needs are in the community?
4. Have I included my follow-through mentor/advisor in developing my research area?
5. Have I checked with the faculty member to see what the research guidelines are?

ACTIVITY:

Think of questions you've always wondered about-don't be conservative. Write down four questions that relate to one another but on one topic. Then, conduct a search on the Internet to begin answering the questions. Also go to your campus library to find further information. Keep a log of what you've done-each step-to answer these questions. Share the log with other students and your advisor.

CHAPTER TWELVE

WORKING WITH UNIVERSITY FACULTY AND STAFF

Laura is an Oneida student at Moorehead State University in Minnesota. She's recently transferred from Fond du lac Tribal and Community College and is majoring in marine biology. She's been on campus for a few weeks and finds the faculty and staff on campus to be cold and indifferent.

Laura has become angry with the university-especially the faculty and staff-over the past few weeks and has decided she will stay to herself and work on her own. Some of the information presented in her invertebrate zoology class is difficult to understand but Laura's convinced that her aloof professor won't give her any help.

In desperation, Laura calls her follow-through advisor from Fond du lac and finds that her community college offers a class in transfer for students who go from the tribal college to the four-year institution. She receives the transfer class materials in the mail and applies them to her four-year experience.

Like many transfer students, Laura expected the same treatment from faculty and staff at the four-year institution that she received at the tribal college. Unlike many transfer students though, Laura did not take the transfer class that was offered by her community college to prepare her for the transition. These classes are offered by many two-year colleges and should be taken if you plan on transferring to a four-year college.

What differences should I expect with the four-year faculty and staff?

Simply because of the size and structure of the four-year university, the faculty and staff you will work with are going to be different from the community college folks you're used to. The smaller, more intimate setting of the community college allows you to develop a one-on-one relationship with community college faculty and staff. If you've taken a transfer class at your community college, you'll actually have a step up on most students coming into the four-year university straight out of high school because you will have developed an understanding of the expectations of four-year institutions.

The 1997 Carnegie Report[30] finds that community college students overall rated tribal college faculty and staff higher than any other college personnel. If you've done research papers for tribal college faculty members, chances are that you focused on tribal-specific problems and were supported in your efforts by tribal college faculty. The four-year university may be different. You should be aware that, in the end, it is the professor of that class makes the determination of what research is, how it should be done, etc. The previous chapter discusses higher education

as a formal process with formal rules and regulations. You must follow those rules when you work with faculty members and write a research paper.

Should my community college advisor be a follow through mentor?

It is not a responsibility of your community college advisor to mentor you to and through your four-year undergraduate experience. But it is highly suggested that you ask your community college advisor to "come along with you" on your journey through the four-year institution. This doesn't mean physically. Rather, you should look to your community college advisor for support.

If you know you'll be transferring from the tribal college, ask your advisor to help you plan for that transfer. And ask your advisor to continue to be your mentor when you're on the four-year campus. This can make the transfer process a lot easier on you because you'll have the support and experience of your community college advisor with you (many advisors at tribal colleges will also help you with personal problems should you need help). Chances are that you've probably established a close relationship with your two-year advisor anyway. Continuing this relationship can help make the transition to the four-year institution easier.

Although advisors are here to help, it is important for you to realize that the ultimate responsibility for meeting all graduation requirements is your own. You can increase your academic planning effectiveness by fully utilizing the advising system, and by acquainting yourself with the academic requirements of your major fields, college policies for registration and graduation, and scholastic requirements.

Won't I get an advisor at the four-year institution?

Yes, you should get an advisor that is appointed by the department you're interested in majoring in. Departments appoint academic advisors in various ways. There are one or more advisors for each department and it's to the student's benefit to meet the advisor and to be open with him/her about questions and concerns. But be cautioned that it is hard to schedule time to meet with the advisor, allow plenty of time. The advisor will assist with requirements, course selection, and offer other help if it is needed. Advisors will also sign drop/add class forms and other course forms that require a signature.

You might also want to take advantage of Native American advisors-at most universities, an Indian advisor is available through the Native American student service office to assist you with financial aid, health issues,

family needs, counseling, and other aspects of college life. Unfortunately, only small minorities of four-year institutions have Native American Studies departments as an academic area. Your best bet will be to keep in touch and visit the Native student service office.

What role does my four-year advisor play?

You'll be assigned an academic advisor to assist you with the selection of courses to fulfill graduation requirements. Your advisor must sign registration and drop/add forms and help you develop a certificate/degree plan. In addition, your advisor may counsel you in areas like academic progress, vocational choices, attendance concerns, and campus policies. But remember that you can change advisors if you'd like.

You must also consult with your advisor prior to registering for classes. All students must officially register with the college prior to attending classes. Registration deadlines are listed on the calendar in the catalog and you must register within the dates specified. A class schedule is published each semester with specific days, times, and locations for classes.

During the orientation session that is held at the beginning of each semester, you'll be assigned your advisor. This is an activity that is required of all new students. Orientation activities include presentations of school policies, financial aid information, student responsibilities, testing, services available to students, assignment of advisors, and may include workshops on important topics.

What are some tips to getting good relationships started with four-year faculty and staff?

First, you should realize that university faculty and staff are in positions at the university because they're interested in higher education and helping students achieve. Faculty and staff are also highly qualified individuals who have been hired by the university because of their expertise. Take advantage of the knowledge that these folks have and, if you don't understand something, ask.

Second, focus on the fact that you're at the four-year institution to get your degree. Universities are focused on student achievement, which means that the personnel are there to help you get your degree. There are many aspects of college life that go beyond the coursework-health, extra-curricular activities, and family issues. University faculty and staff know that the key to student achievement is providing students with services that will help in all of these need areas.

Finally, you must communicate your needs to faculty and staff and allow them time to respond to you. The next chapter is devoted to understanding and succeeding within the university bureaucracy.

KEY POINTS:

* If you get a chance to take a transfer class at your community college, you should enroll in it. This will help you adjust to the differences you'll encounter at the four-year university.
* Remember that university faculty and staff are employees of the four-year institution because they truly want to see students succeed. If you don't understand something in class, or in general about the university, ask someone who will know the answer.
* There are Native American studies offices at many universities. When you get to campus stop by and meet the staff. Later, if you need someone to talk to about your transfer to the four-year college, Native American studies staff will know you and be willing to help.
* Your follow-through mentor/advisor should be contacted regularly during the first few months on your new campus. They will be able to help you adjust to life at the four-year university.

CHAPTER SUMMARY:

This chapter tries to explain why working with university faculty and staff may be different from working with two-year college faculty and staff. The role of your four-year advisor is also briefly mentioned. Finally, tips on starting positive relationships with faculty and staff at the four-year college are given.

ACTIVITY:

Get four or five students together. Each of you select a four-year campus that you'd like to attend. Research the demographics of each campus including the student populations, number of academic and administrative departments, and the number of different student organizations on campus. Imagine how it would be to work on each campus. Then discuss and share the complexities of each campus with one another.

CHAPTER THIRTEEN

SURVIVAL AND SUCESS IN THE ADMINISTRATIVE JUNGLE

Andy is a Comanche student who's in his third semester at the University of Kansas. Andy is majoring in agricultural education and plans on returning home and getting a teaching job. Andy's first semester was filled with stress and frustration-he seemed to be going in circles all the time-and he wasn't sure that he'd even stay at the university.

During the end of his first semester, Andy finally contacted his advisor and told her that he was having trouble. It seemed that he was lost-he didn't know where anything was located and no one seemed to be willing to help him. Andy said he seemed to be repeating the same steps every day and getting no where.

Andy has since graduated with his Bachelor of Science degree in agricultural education and, instead of teaching, has found a great job in agribusiness. He's happy he stuck it out at the university.

Now that you've made it to your new university, you'll see and meet new faces every day. Most four-year universities have thousands of students from different backgrounds and cultures. If you follow the tips provided in this handbook, you'll find that surviving the administrative jungle isn't as hard as it will seem when you start your undergraduate studies.

As a tribal college student you were probably familiar with most of the services offered on campus, the instructors, and the administrators. At your new university, there will appear to be many different offices that do the same thing. This is not the case and with a little patience and research you'll be able to navigate the four-year maze with ease.

Why does the four-year university have to be so difficult to understand?

Large four-year institutions are bureaucracies where one department cannot respond to a request until several other departments have become involved. This means that a question you'd think to be easily answered will appear to be extremely difficult and time consuming. This is due to the administrative structure of the large university and it is frustrating at times.

The good news: There are many people like you on campus. Just look in the student telephone directory or, better yet, check with the Native American academic program or student support office or with the local chapter of AISES (American Indian Science and Engineering Society) before you come to campus. These student offices have been through what you're about to go through and will save you countless hours of frustra-

tion. Some Native American offices even offer tutorial assistance. These student offices also help you anticipate problems before they occur and offer extra-curricular and cultural events that help you lessen the stress.

What should I do to lessen the stress of the large university?

One of the first things you'll want to do when you arrive on campus is to walk it physically. This shouldn't be an unpleasant experience as the grounds of most universities are designed to enhance the higher education experience for all students. Find out where the student services office is, the student union building, health services, and most important, the library.

Go into the library and try to find something on your tribe. It doesn't really matter about the subject matter-just so you'll know that the library does have information of interest to you. Think up a question that you've always wanted the rest of the world to ask. Then try to find the answer in the library. This little exercise will give you the confidence you'll need to begin conducting the research we talked about earlier.

How do I make surviving the administrative jungle easier for me?

There are a few good tips to surviving the administrative jungle. The first is to ask questions. If you don't understand some of the signs or messages posted on message boards or buildings, ask and continue to ask until you find the answer. Administrative assistants and secretaries can answer almost any question you may have.

The second tip: always be on time and get to know your university advisor. Be on time for registration, meetings with your advisor, meetings with other students, and study groups. By being on time, you show others that you value their time as much as you value yours-time flies so use it wisely!

Third, be patient-things take time and bureaucracy can move slowly-and try to look on the bright side of everything. Take a complex, frustrating situation and turn it into a challenge-one that you know you'll master-if you're patient.

Fourth, attend class and don't sit in the back of the classroom-it's much easier to pay attention and be involved from the front row. Also, introduce yourself to other students in each of your classes. Chances are that they might need a friend and study partner too. But be sure to set your own standards-learn to say "no"-socially and academically. Speak up in

class. Don't assume that your instructor will know that you don't understand something and will go over it again.

Finally, take care of yourself by eating well and getting plenty of rest. You should try to balance your life by meeting the four areas of well being—spiritual, physical, intellectual, and emotional. There are a variety of ways to deal with these but each person is different. Choose your own path and stay on it.

Is there anybody to help me in case I run into trouble?

There are "formal" advisors-those who sign forms-and "informal advisors such as people in the student support offices. You should always check with your formal advisor on academic matters. The university sees this staff person as your official "voice." Your advisor will be able to give you advice on how to handle any problems in your academic studies. This is why it's so important to get to know him/her and to establish an ongoing working relationship. Remember, your advisor can't help you if you don't tell him/her what's going on.

If you've found out where the Native American center on campus is, also check with that office if you find yourself in difficulty. Staff at these centers have probably dealt with most problems Native students run into on campus. Be sure to ask for help even if you think your problem is small. Staff are trained to assist students on campus. They're also very interested in helping you succeed in higher education.

How do I anticipate problems before they occur?

The key here is to be prepared and stay focused on your work at the university. You've chosen to go on to the four-year university because you have personal and professional goals. Make a list of those goals and work toward achieving them.

You might also obtain a copy of the undergraduate catalog, read it carefully and keep it for a reference. These catalogs are written for undergraduate students and provide answers to many of the questions you may have. By reading it and referencing it throughout the term, you'll be informed.

Be sure to save your receipts, documents, contracts, and important papers and file them where you can get to them easily. You never know when you'll need to find certain dates, activities, etc. To have these materials in one place will save you countless hours of looking for them.

Finally, use the available resources on campus. Again, these resources are on campus for a reason-to help you adjust, stay, and graduate.

How do I select housing?

If you're going to live on campus, you'll have your housing determined before you actually arrive. This should be taken care of with your admissions application process.

If you're going to live off campus and rent either an apartment or a house, there are a few steps you should take at least three months before you arrive on campus:

1. Make a decision about whether you want an apartment or a house and how much you can afford to pay per month for rent. Also, consider whether you want to live close to campus or within driving distance (this will depend on whether you have transportation to get back and forth to campus).
2. Get a local city/town newspaper to get an idea of what is available and what the current monthly rent is running. If you can, contact the housing department on campus and have them send you a listing of available off-campus housing.
3. Visit the city/town and check out a few of the apartments or homes you're interested in. If you don't find anything in the newspapers or campus publications, look in the yellow pages of the telephone directory under "rental agencies" or "apartment rental agencies" (you should be able to find an agency that will not charge to find you an apartment or house).
4. Have your first and last month's rent available for a down payment on your housing. Some agencies/landlords will charge you an additional deposit, especially if you have pets-some agencies/landlords will not accept pets-be sure to let the agency/landlord know if you have pets.
5. Be prepared to tell the agency/landlord what your move in date will be (it should be well within a week before you have to register for classes) and make plans to move your furniture if that's what you'll need to do.
6. Notify the post office, electric company, telephone company, etc. at your old address and tell them that you're moving. Provide them with your new address.
7. Be sure to let people on campus know of your new address and telephone number.

Moving to another location can be very stressful in itself so try to anticipate problems before they occur. If you'll need to rent a truck to move, check with all the truck rental agencies and get the best price. Also, al-

low yourself enough time to move so that you're not rushed-you'll be rushed when you get to campus and into your classes.

What about child care? Where do I start?

Before you move to your new campus, you should get as much information as you can regarding child care programs and centers in your new area. Here are a few tips:

1. Ask other Native students who've been living in your new community for a few years to give you names, telephone numbers, etc. of good child care centers (where children enjoy themselves, play, pursue hobbies and other interests, build relationships with trusted adults, and socialize with other children).
2. Think about your needs-whether the child care center is open evenings, in case you'll have to take some evening classes-and your children's needs-whether your children will be happy in small groups or homelike settings or larger, center-based programs.
3. Contact your new university's student services office to ask what type of child care the university offers to students. Make an appointment to meet with the director of the child care center and prepare a list of questions you'd like to have answered. For example, cost and whether financial assistance is available to you, hours that the child care center is open, parental visitation (are drop in visits okay?), adult to child ratios, the philosophy of the child care center.
4. You'll also want to contact a Child Care Resource and Referral Agency (CCRR) in your new state to help you locate off-campus quality child care programs. At many universities, child care centers are extremely full and often have long waiting lists. Be prepared to go outside of the university setting.
5. Find out what kind of financial aid is available to you and if you meet low income requirement for assistance. Here, you'd contact the State Department of Social Service (county office) to see if you qualify for child care subsidies (funds that help pay part of the cost of child care). The county office usually determines family eligibility based on income, reasons for needing day care, and your child's age and individual needs.
6. After you've selected a child care center, ask questions and listen to your children about what they like or don't like about the program. If your child is unhappy, find out why. Talk to the caregivers about your child. Keep in touch with parents of other children in the program. Find out how their children are doing and how they feel about the program. Get feedback from the caregivers. Do they offer regular updates about how your child is doing? Do the caregivers encourage your questions and visits?

If you've trusted your feelings and judgement and selected a child care center or program that best suits your needs, you should feel comfortable knowing that your children are in a safe place under the supervision of competent adults.

How do I manage my money?

Managing money seems to be a problem for everyone-not only students-but there are a few simple tips that should help you in this area. You'll have to set up a budget and stick to that budget throughout the semester. This means that you may have to put off buying some of the things you'd really like to have-at least until you graduate and get employment.

Here are a few budget areas to consider when setting up your list of expenses. You should rank the following according to what is most important. Things you'll "need" might include tuition, books/supplies, rent/housing, food, child/day care, health expenses, and transportation expenses (gas, insurance, and car payment). Things you'll "want" might include Cable TV, entertainment, extra clothing, stereos/music/tapes, VCR, and home dÈcor.

When you get your money for college-whether this is through financial aid or your own savings-it is advisable to place it in a savings or checking account. The Montana State University at Bozeman Native American Studies program says:

"It is wise to deposit money in a bank using either a checking account or a savings account. Checking accounts provide instant receipts and are convenient for withdrawal; however, there can be major problems for accounts that are not properly handled. If a check is written and the money is not in the bank to cover that check, it will bounce (not pay the person it was written to). Each time a check bounces the bank charges the person who wrote the check about $15. A check automatically runs through the bank twice ($30 charge), and if it turned over to a collection agency, there is an additional fee of $15-20.

Just think: a check written for $3 that bounces can cost more than $50! The secret to avoiding this problem: Always balance the checkbook! The statement may say there is $74 in the account, but that $74 is effective as of a certain date and depends on how many checks the bank has received. The savings account is the preferred method because "If there is no money in the bank, nothing can be removed which means no service charges."

What about credit cards?

Another area that many students find themselves in trouble with is the credit card. When you register at your new university-or maybe you've already run into this at the tribal or community college-you'll be bombarded with credit card opportunities. Those agencies that issue the credit cards know that offering the "buy now, pay later" card can be most appealing to students who've just spent a lot of their money for books, housing, etc.

Don't fall into this trap! Most credit cards are high interest-ranging anywhere from 18 to 25 percent. This means that if you buy a pair of jeans on sale for $20, let's say, you'll actually be charged 18 to 25 percent more for those pair of jeans, depending on when you pay your credit card bill. And, the interest begins the very moment you buy the jeans-not when your first bill is due. If you think about it, why should you "give" money to the credit card agencies? That's what you'll be doing if you buy on credit.

Another consideration: If you happen to be late in paying a credit card bill, you're charged a "late payment" fee-in addition to the 18 to 25 percent interest you'll already be paying for this $20 pair of jeans on sale. Very rarely will you get a good deal on anything you buy on credit. The old saying, "buyer beware" definitely applies to the use of credit cards.

KEY POINTS:

* The administrative structure of the university defines how long and how complicated a reaction to student questions may be.
* There are at least two types of advisors on the four-year campus: the "formal" advisors and the "informal" advisors.
* Managing your money is an important component of survival on the four-year campus. Stay away from getting and using credit cards while you're on campus.
* If you qualify, you can get financial assistance for child care. Check with your new university and the State Department of Social Service.

CHAPTER SUMMARY:

This chapter includes tips on how to handle your money while you're a student on campus. Resources on campus are also listed and discussed in relation to how they can make surviving the administrative jungle easier. Finally, tips on how to find housing that's right for you are provided.

CHECKLISTS:

SURVIVING CAMPUS LIFE
Ask questions like:

1. Have I taken a walk around campus to become familiar with the campus before registration?
2. Have I contacted the Native American student office or the AISES chapter to familiarize myself with what the university has to offer?
3. Have I gone to the library to look up material on my tribe?
4. Have I done everything I can to make my experience on campus as easy as possible?
5. Have I identified my "formal" advisor?
6. Have I taken the necessary steps to select the housing I'll need?
7. Have I developed a plan on how I'll manage my money?

ACTIVITY:

Get together with a group of students from your community college and "brainstorm" a listing of "things to do" before you arrive on campus. Then prepare a flyer or brochure that can be passed out to other students who are planning to transfer also. You might want to ask for additional ideas from other students for your "to do" list.

CHAPTER FOURTEEN

BALANCING YOUR ACADEMIC AND PERSONAL LIFE

Cathy (Oglala) is a single mom and senior at the Central Michigan University. She earned her Associate of Science degree at Oglala Lakota College in South Dakota and has got only a few courses left to finish her Bachelor of Science degree in computer engineering. Cathy has two small children and has managed to spend the necessary time with them and get straight A grades as well.

What's her secret? The key to success at any college or university, says Cathy, is to manage your time and develop good study habits. Here are some of the things Cathy did to balance her academic life with her social and personal needs and responsibilities.

Everyone has got to develop a plan of action and follow it in order to succeed at anything. This is true in the workforce and at school. Time management is simply setting up your priorities, developing a workable schedule, and meeting the deadlines you've set for yourself.

This sounds easy but how do I begin?

This handbook talks a lot about goals and objectives. If you're thinking about transferring from a tribal college to a four-year institution, you've already determined your academic goal. That is, to earn your bachelor's degree in science, mathematics, engineering, or technology.

Your objectives are the means you'll develop to reaching your bachelor's degree. These will include taking classes that will apply to your degree and getting good grades in those classes. But that is not all. You'll also have to set a certain time of each day to study and review class notes.

Having fun is also an important part of time management. You'll have to set aside some time during the week to spend with your family and friends so that you balance your studies with relaxation. Though this is not mentioned anywhere in student catalogs, admission applications, or course schedules, it's an extremely important factor in whether you succeed or not.

Here's how you begin. First, write out your academic goals on a sheet of paper (or the computer screen) then make a step-by-step list of all the activities you'll need to accomplish in order to achieve your goals. Second, write out your personal needs/goals and create a similar listing of all the things you'll need to do to meet your personal goals. This list might look something like this:

Academic Goal: To graduate by 2000 with a bachelor's degree in chemistry.

Academic Objectives:
1. Take courses in general chemistry, inorganic chemistry, organic chemistry, physical chemistry, instrumental analysis, transition metals, chemical kinetics, and thermodynamics.
2. Meet with my advisor every week.
3. Join a student chemistry association on campus.
4. Enter my research project in national chemistry competition.
5. Join/establish a study group for chemistry students and meet weekly.

Personal Goal: To maintain my spiritual, physical, intellectual, and emotional well being.

Personal Objectives:
1. Attend and participate in activities sponsored by the Native American center on campus.
2. Play racket ball at least twice a week.
3. Read chemistry-related magazines throughout each week.
4. Spend at least two hours in the evening each day with my family.

You might want to get together with a friend or several friends and enlist the help of an advisor in setting up your goals and objectives. Involving others will help you develop a more complete list of what it will take for you to succeed in higher education. Advisors are also excellent resources because they work with students like you every day and can help you round out your higher education experience.

After you've developed your list, post it where you'll see it every day. Another approach is to get a daily log ("Day-at-a-Glance" is good) and develop your schedule according to your academic and personal goals/objectives. This will also help you follow your schedule because everything will be set up for you-you won't have to spend time trying to figure out how you'll get everything done.

Studying is boring. How do I make it fun?

Developing good study skills is the key to making the drab exciting! Here are a few tips that will help you get the most out of your studies:

1. Establish priorities. Set aside a time each day for both studying and socializing.
2. Choose a place providing maximum opportunity to concentrate.
3. Complete reading or writing assignments before class. Class presentations will make more sense!

4. Sometime the same day, review and highlight notes taken in class. This prepares you for exams and pop quizzes.
5. Use time between classes; review material, read a short assignment, or proofread papers.
6. Group study can be helpful especially for test preparation.
7. Exams can cause anxiety. Keep up with the class and test time does not become panic time! Do not expect to learn everything through last minute cramming.
8. If you don't understand material that is being presented or are falling behind with assignments, see your instructor right away, not a week before finals, to find out what can be done to resolve your problem. Talking with your advisor may also help. If it is determined that a tutor will be able to help, you may qualify for tutorial programs.
9. Finally, and most important, get plenty of rest and eat regularly. If you're tired because you've stayed up too late or haven't been eating good meals, your coursework-and the rest of your life-will show it.

Are there any resources to help me with these things?

Most universities have a variety of resources available to you and at a minimal or no charge. One of the first things you should do when you get to the point of setting up you study schedule is to check with the student services office to see if you have a computer account. Many universities these days offer both the use of a computer and free hours of online time to do research, etc. Related software for most fields of study are also available with the student computer account.

There are also resource centers, including the library, where you can go to get away from everything but your subject matter. The library can access many online databases to help you in your research and uses interlibrary loan services.

If you're having trouble in any course, there are also tutorial centers where, as we mentioned above, you might qualify for free assistance. And there is no stigma attached to tutorial services in higher education. Everyone has used these services at one time or another.

You might also want to check with other students to see if there's a file of past tests for the different courses you'll be taking in science, mathematics, engineering, and technology. This file can be an excellent resource for study purposes and can give you insight as to what past instructors and faculty members see to be the important points of each class. If you're a member of a fraternity or sorority, check with your house to see if they have collected past tests for study purposes.

Finally, textbooks are expensive. You might want to check with other students who've taken the classes you'll be taking and ask if you can use the textbook. There might be a collection of texts that students use in order to save money. In addition to being a cost-effective approach, this will help you meet new friends and begin building your teamwork skills.

Should I select an environment that promotes study?

Most often you will want to work in an environment that promotes study-somewhere quiet where you can focus on reading or preparing for a class presentation. Just to be sure, though, there are some very basic tips/tricks that can help remind you what your goal at the four-year university is:

1. Develop affirmations that you believe in and that deal with leadership, teamwork, priorities, etc.
2. Make several plaques or signs that remind you of leadership, teamwork, and priorities and place them throughout your apartment, dormitory, or home. You might want to paste these on places where you'll see them daily like the bathroom mirror or the refrigerator.
3. Whenever you feel like taking a break-when you should be studying-just read through several of these and try to get back on track.

What about a study group?

Find a study group in your field of study and meet with that group on, at least, a weekly basis. This will help you understand the course information and build on your leadership, teaching, and mentoring skills-all of which will be highly valued when you graduate. Talking with other people who have similar interests will help them and you. You'll also get different ways of viewing subject matter that can be rather boring.

KEY POINTS:

* The key to success in higher education is to manage your time wisely and develop good study habits.
* Develop a plan that includes long-range goals and short-term objectives.
* Use a marketing strategy for courses that are boring-make a disadvantage, an advantage.
* Identify all the resources on campus that will help you succeed.
* Establish or join a study group.

CHAPTER SUMMARY:

The interrelationship between time management and study skills is the focus of Chapter XIV. Skills necessary to meet employment opportunities are presented and discussed.

CHECKLISTS:

BALANCING YOUR PERSONAL AND ACADEMIC LIFE
Ask questions like:

1. Have I written down my personal and academic goals for my time on campus?
2. Have I tried to make studying fun?
3. Have I taken advantage of resources on campus that can help me learn good study skills and time management?
4. Have I selected an environment that will help me study?
5. Have I joined a study group?

CHAPTER FIFTEEN

LEADERSHIP, TEAMWORK, AND HIGH TECHNOLOGY

Phillip is a Jicarilla Apache and a second semester junior at North Dakota State University. He transferred to NDSU from Din'e College and is majoring in geology. Phillip knows that there are "new" students on campus who probably feel as alone as he did when he first arrived and he wants to help.

Phillip organizes a picnic for new transfer students so that he can help the new students begin to feel at home on the university campus and, at the same time, provide them with information about his first semester experiences at the university. At the picnic, Phillip also asks new students to join in a Native American support group that meets twice a week.

Working with other students helps you to develop qualities that are highly valued in academe, industry, business, and government. Those qualities include teamwork, leadership, mentoring, communication, and research. In today's business and academic world, being an effective team player will often give you the edge over others.

The fields of science, mathematics, engineering, and technology are quickly overlapping with other fields, so much so that effective organizational and communication skills are necessary requirements for many careers. If your choice of career places you in business or industry, you may be teamed up with others in your firm. It's not unusual these days to see teams develop among different businesses either.

Academe also requires the ability to work effectively with team members. In fact, one of the three measurements of professional success in academe is measured by how many and what kind of committees you serve on. That's teamwork. The other two criteria for success in the university setting-research and community service-also rely, to a great degree, on your ability to work in teams.

How do I strengthen my team skills?

Reaching out to other students in your field of study is one of the first steps. You can start by joining a study or reading group where sharing ideas and information can serve as a foundation for building your team skills. But in order to share information, you'll have to be willing to listen to the ideas of others and this is a component of team building.

Volunteer to conduct an exercise in front of your class. Yes, speaking is also a component of team and leadership development. The more expe-

rience you get communicating your thoughts to others, the further ahead you'll be when it comes to team work in the workforce.

Find out about your computer account at the university and get on the Internet. Join chat groups in your field of study or just for fun. There are literally thousands of chat groups-ranging from pets to building model airplanes-and all you have to do is look for them then join in. You won't probably see this as building your team skills but it will definitely be that. The very act of reaching out to someone, becoming involved in a discussion, and presenting your ideas will begin to build a solid foundation for you in working with teams of people.

If you've written a particularly good paper or conducted a nice piece of research, you might think of presenting it at a national conference such as AISES poster sessions where others will hear about your work and give you constructive feedback. Here again, the very act of reaching out to others can only help to develop skills you'll need in the workforce.

Are leadership skills related to team skills?

Skills involving leadership, teamwork, and mentoring are interrelated. Anything that requires you to initiate an activity is considered to be leadership development, anything you do to help another student is mentoring, and anything you do jointly with other students is teamwork.

If you look back to the case of Phillip in the beginning of this chapter, he has tapped into his leadership, mentoring, and team building skills. You, too, can begin to develop the necessary skills to strengthen team skills and prepare you to function more effectively in your professional career.

Can students mentor other students?

Some of your best mentors may be other students. Watch your classmates and identify those that you most respect. Make a concentrated effort to figure out why you respect that student over others. Chances are that the student you respect is practicing leadership and team building skills. The students you most respect will also probably hold the opinions of other students in high regard.

Where do problem-solving skills come in?

Problem solving is also an essential skill that is highly valued in the work place. People solve problems differently but you can be an effective problem solver by developing a method that allows you to use your leadership, teamwork, and mentoring skills at the same time. Here are a few

steps you should take before making any decision on an issue:

1. Get to know both sides of the issue in-depth;
2. Weigh the pros and cons of each side of the issue;
3. Make a decision that will be the best for all involved; and
4. Stick with your decision-right or wrong-at least until you have additional information that would impact your decision.

The key here is communication. You'll have to talk with those involved on each side of the issue to discover exactly what the argument is. This will also help you determine the pros and cons and the best outcome for all involved. The last step is very important when you're working with others, especially in the area of leadership.

A good leader will take all of the steps above and won't make a decision until all of the information has been weighed. But we also must remember that we're only human. If additional information is presented, you'll need to be willing to rethink your decision-using the steps above.

I hear that working with other students is easier if you're part of a club. What are some of the clubs on campus for science and engineering students?

Depending on the campus, there is usually a Native American club on campus and many field-specific clubs or organizations that you can join. Here are a few:

American Indian Science and Engineering Society (AISES)-is a national association that nurtures the building of community by bridging science and technology with traditional Native values.[31]

Native American centers-are dedicated to responding to the social and cultural needs of Indian students on campus. Each center has its own structure and function. Check with the student services office on your campus to find the Native American center.

Student Senate-is located on all major university campuses and usually serves the function of providing effective representation of student interests in campus issues. The student senate acts to ensure that students have a major voice in governing those affairs, which directly and primarily affect them and to guarantee the rights of students.

The Greek system-is composed of fraternities and sororities on or near university campuses. Sororities and fraternities serve to establish social communities within the larger university community. Information regard-

ing the Greek system can be obtained at registration (general information is also included in the college catalogs).

Native Clubs-most of the Indian clubs on four-year campuses serve the need of Native students and their families but non-Indian members are equally welcome. Meetings are scheduled at different times on different campuses. You'll have to watch for signs announcing meetings, or ask another student when the next Indian club meeting will be.[32] On many four-year campuses, there may also be a spirituality committee/club that sponsors sweats, speakers, and workshops with other year-around activities like picnics, bowling, roller skating, Homecoming activities, Thanksgiving and Christmas dinners, Easter egg hunts, and fund-raisers such as taco sales. There may also be Powwows, Dancer/Drum competitions, and participation in Native American Awareness Week.

Sports or Intramurals-most four-year universities offer an intramural program that provides an opportunity for student participation in a variety of sports including volleyball, basketball, and softball. The objectives of the intramural program are to provide for recreation, physical fitness, social contact, and an opportunity to develop a permanent interest in sports.

Other student organizations on campus-may include tribal-specific clubs like the Apache Club, Navajo Club, Sioux Nation Club, Kiowa Cultural Club, etc.; religious clubs like the Baptist Student Union, Catholic Students Association, LDS Club, Native American Church, etc.; athletic clubs like the Cheerleaders Club; On-campus clubs like the Campus Activities Association, the Residence Hall Association, and the Student Senate; discipline-specific clubs like the Social Work Club, the Indian Performing Arts Association, and Future Indian Teachers; Greek associations like Mu Alpha Theta, ZUE Krue, and Phi Beta Lambda; and Off-Campus Clubs.

There may also be a Native American Center in the off-campus community that can be supportive to Native students as well. Examples that come to mind are the Phoenix Indian Center and the Minneapolis Indian Center. Though these Native American Centers are structured around Native community activities, students can and do contribute through participation in basketball games, workshops, and craft exhibits. The community Native American Centers can serve as excellent training for student leadership development.

I'm interested in using the Internet. What's the difference between the Internet and the World Wide Web?

In simple terms, the Internet is a huge collection of computer networks that are interconnected around the world. Roughly 10 million comput-

ers are "on" the Internet. The World Wide Web (WWW or "the Web") is a subset of the Internet.

Technically, the World Wide Web is called a "hypertext system" (HTTP) that uses the Internet as its transport mechanism. In a hypertext system, you navigate by clicking hyperlinks that display another document, also containing hyperlinks. What makes the Web such an exciting and useful medium is that the next document you see could be housed on the computer next door or half way around the world. The Web makes the Internet easy to use.

If I'm new to computer technology, where do I begin?

The best and fastest way to learn about the Internet and the Web is to take a class or two at tribal and community colleges and at all four-year universities. But if you're adventurous enough, you might just want to go "online" and learn by trial and error.

To begin, you must have a computer equipped with a telephone modem. This will enable you to log in to a mainframe computer on the Internet, provided by an Internet Service Provider (ISP). Commercial accounts usually cost around $20 a month but many higher education institutions provide access to the Web at no cost to students.

The most important tool for viewing the Web is a software package known as a "browser." Some of the most popular browsers include Netscape, Microsoft Explorer, and America On Line. The browser allows you to access text, images, audio, video, and computational services in a consistent and simple way.

Because the Web is such a massive and open forum, it's hard to find specific information. The best way to find web pages that relate to a subject is to use a "search engine." One of the easiest sites to use is http://www.search.com. This web page offers many different search engines at one site. Each of the engines may return different results for the same search phrase. The main trick to using search engines is to find a unique search word or phrase for the specific information sought.

After "surfing" the Web for some time, you might ask how you can create a Web page for yourself. There are many software programs available-some word processing programs like Microsoft Word will allow you to create a web page as easily as creating any other text document. If you want to learn how to create a web page contact: http://www.lib.berkeley.edu/TeachingLib/Guides/Internet/FindInfo.html.

How does the World Wide Web serve as a resource for undergraduate study?

There's an excellent web site (http://www.StudentAffairs.com) that provides the most comprehensive index of Internet resources for college student affairs professionals. Undergraduate students can use this site to find information on about anything having to do with higher education. It's called the Student Affairs Virtual Compass and is updated regularly.

You can also use the Web to form a cooperative group with other students in order to make presentations to each other and agree to provide (and accept) honest responses. Communicate with others via the Internet and try to express your ideas clearly. Students can and should mentor other students and the Web serves as an excellent medium for this.

How can I collaborate on research with other students through the Internet?

High technology has made it possible for students, professors, parents, and even brothers and sisters, to communicate with one another via written form but within a matter of minutes. The means is e-mail and it's something everyone is talking about but few understand.

Students can collaborate with other students in writing research papers, conducting research projects, or sending the latest photo of a project you may be working on with another students. E-mail is a means to communicating with anyone else who has e-mail (unless of course, you choose to go the traditional route and use "surface" mail) and it can be accomplished in a matter of minutes.

If you have your own computer, there is a monthly fee that ranges from $16 to about $20 per month (you can be billed monthly). This is an access fee that simply means you're paying an agency or firm to provide you with access to the Internet. If you select a relatively small-but dependable-agency or firm to provide you with access, you're guaranteed a world of resources via the Internet and access to research papers that can be downloaded as an attachment from the e-mail system.

In this situation, research papers/projects can be shared with one another in a matter of minutes. You'll have to decide who will handle each section of the paper or project, set a deadline for both (or more) of you to meet, then simply write your e-mail to your teammate and attach your portion of the paper or project.

Another area of interest to you as a science and engineering major is the whole area of interactive communication. In class at the university, you'll receive the theoretical information necessary to understand why things are the way they are. But on the Web, you can actually view basic life processes-through interactive video-that answer questions like "How do plants grow?" "What is an atom?"

What's the future of the Internet?

Changes in the Internet and the Web are happening so fast that it's impossible to predict where the Internet or Web will be even within the next few weeks. One of the most recent advances that will impact higher education is the development of Internet 2, a project by more than 70 of the 100 major U.S. research universities to develop a new Internet that would be at least 100 times faster than the current system.[33]

Recent media reports indicate that e-mail is becoming so popular that the U.S. Post Office might be on the run to find customers. Postage stamps cost a lot of money and the price is supposed to go even higher. Surface mail also takes days, sometimes weeks, where E-mail is immediate and free (except for the monthly Internet Service Provider charge).

The Web already has sites that offer online shopping, banking, and commerce. As security issues are solved, the computer will become an even more popular tool than ever. As bandwidth (the ability to transfer more information at an even faster rate) increases, people will be able to visit virtual museums, malls, and even communities; interacting in real-time with others. Many of these features are already available in a somewhat primitive form. But as time passes, the uses of the Web will only be limited to the imagination of the users.

Here are a few ideas that aren't so far off in the future:

Job hunting-right now there are a variety of online agencies that cater to people who work at home. Information among the employment agency, the job applicant, and the employer is exchanged for a fee. The applicant gets access to the employer without leaving home and the employer doesn't have any overhead costs usually associated with hiring employees.

Full-scale publishing-Some publishers are issuing a call for papers online and some publishers actually e-mail you with an invitation to submit papers. If you don't want to be contacted by the publishers, you can go into the Internet and conduct a "net search" to ask for publishing possibilities and select those publishers you'd like to work with. Magazines

are not out of the picture either. Someday soon, you'll be able to call up your favorite magazine online and get the whole issue on your computer screen.

Voting-Well, maybe not in tribal elections-yet! But the facts are that many organizations on the Internet today already have fill-in forms. You can order a book from a publisher, fill out a Better Business Bureau complaint online, join an organization, and locate almost any person-all by filling out pre-set forms.

The point here is that science and engineering majors will be more apt to be involved in designing new technologies for future generations-like the Internet, the Internet 2, and probably the Internet 3. Working with other students through the Internet can only help you broaden your perspectives and achieve a greater degree of flexibility in choosing your career path.

KEY POINTS:

* Working with other students helps to develop leadership and team skills-highly valued assets in today's job market.
* Skills involving leadership, teamwork, and mentoring are interrelated.
* Some of the clubs and associations on campus can help you build your leadership, team, and mentoring skills. Check them out. A word of caution: It's easy to get "too social" to the detriment of your studies. As in all parts of your life...strive for balance.
* You can use the Internet as a means of developing your teamwork skills by working with other students via the Internet.

CHAPTER SUMMARY:

The importance of developing your leadership, mentoring, team, and research skills is the focus of this chapter. Differences between the Internet and the World Wide Web are also addressed with several web sites identified for your individual use. The Internet is also examined as a medium for working with other students and professionals in your field in the development of leadership, mentoring, and research skills.

CHECKLISTS:

DEVELOPING AND USING YOUR SKILLS
Ask questions like:

1. Have I reached out to other students to strengthen my leadership skills?

2. Have I volunteered to give speeches in class in order to strengthen my communication skills?
3. Have I learned how to work on the Internet?
4. Have I identified and contacted several clubs on campus in order to strengthen my team skills?

ACTIVITY:

Get together with at least four other students and "brainstorm" questions you'd like to have answered about higher education. Then select one or two questions you'd like to research, go to your (a) computer, and find the answers through the Student Affairs Virtual Compass web site (http://www.StudentAffairs.com). Meet with the other students involved in this activity and share your findings.

CHAPTER SIXTEEN

TOUCHING THE SKY: CAREERS IN SCIENCE AND ENGINEERING

This Nez Pierce woman is interested in why the sky looks the way it does, how the stars and planets came into being, and what the universe is. Her name is Arlene and she's just completed two years at the Fort Peck Community College. Arlene has chosen tribal college courses that will help her have a solid background in science and mathematics courses when she enrolls at the Montana State University.

Even though Arlene has heard that astronomy is a difficult field, she's decided to work toward her bachelor's degree. She looks at astronomy as a challenging and rigorous science and understands that it's because the objective of astronomers is nothing less than to understand the nature of the universe. It takes a special person to pursue this objective; one who likes to challenge and to be challenged.

Many young Native professionals have taken the path that Arlene has. More Native students are going into science, mathematics, engineering, and technology because they see the interrelationship between science and nature. The All Nations AMP program at the Salish Kootenai College has developed a video that contains interviews with some of these Native professionals who are working in the science and engineering fields.[34]

What are the career opportunities in some of the science and engineering majors?

The College Board Guide to 150 Popular College Majors[35] contains a listing of career opportunities for a variety of majors. Science, mathematics, engineering, and technology information is reprinted below:

Biochemistry-A bachelor's degree in biochemistry provides a good foundation for a graduate degree in biochemistry, molecular biology, or an allied molecular life science. It is also a logical choice for entry into medical, dental, or veterinary school or into allied health and agricultural careers in such areas as biotechnology, toxicology, biomedical engineering, clinical chemistry, plant pathology, and animal sciences. Some bachelor's degree holders enter the job market directly. Those who wish to work at the bench (in the laboratory) find jobs in universities or government, research institutions, or industrial laboratories. With appropriate education courses, the broad-based scientific background of biochemistry major makes the person ideally suited to teach science at the primary or secondary school level.

Biology-The biology major may lead to careers in biotechnology-based businesses as sales representatives or laboratory technicians, park naturalists, science journalists, middle school or high school teaching. With postgraduate degrees: medicine, dentistry, veterinary medicine, optometry, physical therapy, hospital administration, public health administration, college teaching, biological research in private industry, or government laboratories, and law.

Biophysics-Many careers are immediately open to biophysics majors because of the breadth of the training they receive. Biophysicists work in universities and medical centers, national laboratories, public and private research centers, and in corporations that manufacture health products, pharmaceuticals and scientific instruments. Many biophysicists earn masters or doctoral degrees before entering the work force.

Biotechnology-the biotechnology major may lead to careers in research, quality control, clinical research, information systems, regulatory affairs, biotechnology patents, manufacturing/production, and marketing/sales. There is a wide array of opportunities for specialists knowledgeable in biotechnology, including lawyers (patent and regulatory), computer scientists, physicians, toxicologists, veterinarians, professional managers at all corporate levels, and regulatory agency personal.

Botany-A bachelor's degree in botany prepares graduates to work as assistants in laboratories, to enter biology-related businesses or conservation programs, or to continue in graduate school toward teacher certification or a doctorate. Examples of some jobs students may pursue are technical posts in all areas of biology, forestry, and horticulture; sales of biology products; science education in museums, independent schools, and public programs; environmental consulting; natural resource management.

Marine biology-Marine biology graduates find jobs with government, state, and federal environmental programs, particularly those dealing with coastal management, conservation, and recreational and commercial fisheries. Commercial positions are available in mariculture (cultivation of marine organisms). Students may become environmental consultants or, with appropriate professional education, specialists in marine and environmental law. With appropriate certification, graduates can teach in public schools.

Microbiology-The microbiology major can lead to careers in the health professions, the food and beverage industry, water and wastewater management, pharmaceuticals, scientific sales, production of home/personal care products, the oil and aerospace industries, aquaculture, agriculture,

chemical and energy industries, sterilization industries, biomedical devices and diagnosis, microbiology equipment design and sales, government, education, law, space microbiology, basic and applied research, biotechnology/molecular biology, and genetic engineering. Appropriate graduate study is needed for some of these pursuits.

Molecular and cell biology-Many graduates of molecular biology programs enter the job market directly. They take positions in university, government, or corporate laboratories. In addition, pharmaceutical and biotechnology firms involved with genetic engineering have a constant demand for well-trained individuals who have a strong analytical perspective and can work as members of research teams. A degree in molecular biology is an excellent stepping stone to a graduate degree in biochemistry or an allied molecular life science. It is also a logical degree choice for entry into medical, dental, or veterinary medicine at a time when health sciences are moving into the molecular arena at a very fast pace. Molecular biology can prepare students for graduate study in such allied fields as biotechnology, toxicology, plant pathology, animal science, and clinical diagnostics.

Science education-With a bachelor's degree in science education, one can teach science in a high school or middle school. Most teachers continue to take courses and may complete a master's degree. With graduate training, on can become a supervisor of science teachers in a school system, a principal, and a curriculum coordinator in a school system, or a college or junior college teacher of science.

Wildlife management-The wildlife management major may lead to jobs as a wildlife biologist/manager, environmental educator, environmental consultant, park naturalist, or research wildlife biologist.

Zoology-A bachelor's degree in zoology may lead to a job as a research assistant or a teacher in a secondary school. The major is excellent preparation for professional study leading to careers in medicine, veterinary science, and dentistry. It can lead to jobs in other health professions, such as optometry, nursing, medical technology, and genetic counseling. It can also lead to careers in agriculture and environmental research. A doctorate is generally required in order to work as a zoologist.

Aerospace/aeronautical engineering-Aerospace engineering majors usually enter the aerospace industry, which loosely includes the aerospace prime contractors and their major suppliers, the propulsion industry, academe, NASA, Department of Defense research and development, other allied government agencies, and the airlines. Within this framework there are careers in the following areas: R & D (research and development),

marketing/planning, computer application technology. Engineers generally work in groups devoted to specific disciplines, such as systems engineering, structures, aerodynamics, controls, and human factors. The undergraduate degree in aerospace engineering has proved to be an excellent stepping stone to graduate education in medicine, law, and business.

Agricultural engineering-Agricultural engineers hold positions in industry, business, government, and universities. They work for food and fiber processing companies, machinery companies, government agencies (dealing with protection of the environment and energy, soil, and water resources), and the electric and gas utility industry. Their work can include research, testing, design and development, manufacturing, marketing and sales, operations, teaching, and administration.

Chemical engineering-The chemical engineer major has a wide range of careers to choose from the following graduation. Graduates may work in: plant operation (production), plant technical services, plant management (supervision), engineering design, marketing, technical sales, corporation management, research and development, college teaching, and product development. Careers in some of these areas become available as the chemical engineer gains experience and cannot be entered directly upon graduation.

Civil engineering-Entry-level position in civil engineering are found in a wide range of organizations such as engineering firms; government agencies at the city, county, state, and federal levels; construction companies; major corporations; and aircraft companies. As engineers gain experience, career paths may lead to a position as an expert in a technical specialty area or engineering management. In the future, the master's degree will probably be required for entry into the profession.

Computer engineering-Accredited programs prepare their graduates for entry into any area of specialization within the computer engineering profession (design and development, manufacturing, protection, and marketing). Work in these areas can lead later to positions in management. Some graduates use the degree as the basis for further study in such fields as medicine, business, or law. With graduate study in computer engineering, positions in research and university teaching become available.

Electrical engineering-Electrical engineering graduates work in many fields, for example, energy conversion systems, process control, instrumentation, information processing, and avionics. They work in the following functions: research, testing, operations and maintenance, teaching, de-

sign and development, manufacturing, marketing and sales, and administration. Related activities include systems analysis, product development, production field service, and user training. With postgraduate degrees: research, design and development, college teaching, business administration, management, law, and medicine.

Industrial engineering-The industrial engineer major can prepare one for careers as an industrial engineer, systems analyst, production control manager, quality control manager, operations research analysts, industrial cost control manager, manufacturing engineering manager, systems designer, plant manager. After graduate work in industrial engineering (the MS or Ph.D.) one may work as an engineering scientist.

Materials/metallurgical engineering-Materials/metallurgical engineering graduates work in diversified functions including the following: manufacturing, research, technical services

Mechanical engineering-Mechanical engineers are actively involved in a wide range of careers in industry, business, government, and universities. Engineers interact with people or machines in research, design, development, testing, manufacturing, operations, marketing, sales, or management. Many mechanical engineers complete advanced degrees in engineering; others continue their education in related fields like medicine, law, or business.

Petroleum engineering-Graduates of petroleum engineering programs will find positions available with oil and gas companies service companies and drilling contractors, pipeline companies, consulting firms, and financial institutions. Some jobs primarily involve fieldwork supervising drilling or production operations, and others primarily involve office work. Some positions are highly technical, and others deal mainly with business management. Some of the jobs available are: energy company management, drilling engineer, production engineer, reservoir engineer, research engineer, environmental production manager, safety manager, computer applications specialist.

Clinical laboratory science-Certified clinical laboratory scientists are in demand in fields of medicine, industry, research, management, and teaching. Positions that this major leads to include: clinical laboratory science (laboratory technologist), research analyst, forensic analyst, industrial technical/marketing representative, risk manager (in health care), infection control officer, environmental control officer, environmental health officer, public health/epidemiological control officer, laboratory information manager. Advanced degrees are usually needed to work as a laboratory manager, college teacher, or clinical laboratory program di-

rector. With appropriate graduate work, students may become a physician or surgeon, dentist, veterinarian, health administrator, or business manager.

Nuclear medical technology-on completing the program, students are prepared to work as nuclear medicine technologists. Most jobs are in hospitals. Technologists often move to management positions or choose to specialize in computer applications, radiopharmaceutical preparation, or sales. Choices open to technologists

Pharmacy-With a professional degree in pharmacy, one can work as a manager of a pharmacy in a hospital or clinical setting, as a district manager of chain pharmacies, a clinical specialist in pharmaceutical care, or a quality control supervisor in the pharmaceutical industry. With appropriate graduate degrees, one can pursue careers in academia, clinical drug research, medicine, dentistry, or law.

Mathematics-Many new jobs in the 21st century will require the ability to use mathematics; yet there is a declining pool of mathematicians to supply the demands of science and technology and to train our next generation of scientists. The opportunities for mathematics majors will be plentiful and diverse. Many majors are sought by medical and law schools as well as by graduate schools and employers in economics, accounting, management sciences, natural sciences, social sciences, computer science, statistics, and communication. The major may lead to careers in business, industry, middle school and high school teaching, government, engineering, statistics, and accounting. With graduate degrees, one can have a career in actuarial science, medicine, law, college teaching, or mathematics research.

Mathematics education-The mathematics education major can lead to careers as high school teacher, middle school teacher, training specialist for business or industry, and to other careers in business. With graduate degrees, one can work as a college teacher, education researcher, school principal, or superintendent.

Statistics-The statistics major leads to careers as a statistician with a wide variety of employers in manufacturing, pharmaceuticals, insurance, government statistical agencies, consulting firms, agricultural research, and more. Statistics majors also find careers in actuarial science, statistical programming, operations research, and mathematical analysis. A graduate degree can enhance career possibilities.

Astronomy-Astronomers work in planetarium, science museums, or other public positions. A major in astronomy provides excellent preparation

for careers in fields other than the physical sciences. Astronomy majors have become neurosurgeons, high school teachers, trial lawyers, and insurance executives. A graduate degree is required to become a professional astronomer. Most astronomers are affiliated with universities, observatories, or laboratories. About 30 percent work for the federal government.

Atmospheric sciences and meteorology-The major in atmospheric sciences and meteorology can lead to jobs as a weather forecaster, television or radio weather announcer, air quality analyst, agricultural meteorologist, climatologist, or scientific programmer. A graduate degree can lead to careers as an U.S. Weather Service forecaster, research scientist, or college teacher.

Chemistry-The major in chemistry traditionally leads to careers in the chemical, oil, or pharmaceutical industries. Analytic chemists are in demand in almost all process industries and in many government regulatory agencies. Because and understanding of chemistry helps to foster many practical developments (for example, in structural materials, food products, and microelectronic devices), there is a demand in industry for students who have studied chemistry. The following careers require some graduate or professional education: research, medicine, patent law, teaching, and management.

Geology-As natural resources dwindle, geologists are needed in exploration, planning, hazards reduction, and basic research. Although the petroleum and mining industries are still the largest employers of geologists, today an increasing number are hired by engineering and groundwater consulting firms and by local, state and federal agencies. Graduates can also, with appropriate certification, teach in public schools. A master's degree is usually required for long-term employment and advancement.

Geophysics-Exploration geophysicists in industry work for oil, mining, exploration, and well-logging companies acquiring, processing, and interpreting results of large-scale active geophysical experiments. Parallel careers exist in academe and government (with the U.S. Geological Survey). Graduate degrees are needed to teach in college or do advanced research.

Oceanography-A major in oceanography can lead to careers in research, teaching, administration, marine affairs, environmental studies, inspection, computing, instrumentation development, statistical analysis. Many oceanographers are engaged in pure or applied research, and work at sea, in laboratories, and at computers.

Physics-The degree in physics can lead to jobs as a researcher or teacher. Graduates will find job opportunities in many types of industry as researchers. With the appropriate teaching credential, students may become middle or high school science teachers. Many physics graduates pursue graduate study in physics. With an advanced degree, they can do research for industrial, government, or nonprofit laboratories, or teach in colleges. Their research may be "pure," extending our knowledge of the universe, or in support of new products.

There are other careers that are not listed here, including environmental science, natural resources, range management, and toxicology.

Are summer internships recommended for careers in science, mathematics, engineering, and technology?

We've mentioned earlier that summer internships are excellent for hands-on experience in a given field. If you are interested in pursuing a summer internship while you're working on your baccalaureate degree, you've got to start your planning early-at least six months before you'd like to start. In addition to checking with your university advisor, you should check with the university's employment office and your department to see what opportunities are available.

Summer internships can offer you the needed encouragement and support from mentors and will provide you with intellectual gratification and the opportunity to gain research experience in your field of study. Internships will also provide you with an awareness of careers and opportunities in the fields of science, mathematics, engineering, and technology and may be a good source for employment after you graduate.

KEY POINTS:

* Select your science, mathematics, engineering, and technology majors carefully and do the research to know exactly how much schooling will be required for the job you want.
* Some of the careers in science, mathematics, engineering, and technology do not require advanced graduate work like botany-a bachelor's degree will prepare you to work as a laboratory assistant.
* Most undergraduate courses in the sciences will build on advanced degrees in science, mathematics, engineering, and technology.
* Summer internships are recommended for hands-on experience in your field of study.
* Students who graduate with degrees in science, mathematics, engineering, and technology have a wide range of careers to choose from.

CHAPTER SUMMARY:

This chapter looks at the different career options available to graduates in the fields of science, engineering, mathematics, and technology in relation to the level of education achieved. Summer internships are recommended for students in these fields.

ACTIVITY:

Select one of the careers listed in the preceding pages and find an organization in your area that employs science, mathematics, engineering, or technology professionals. Contact the organization and set up a meeting with one of the professional scientists or engineers in that organization. Prepare a list of questions that you have about that field, his/her job responsibilities, salary, etc. and ask the professional those questions when you meet with him/her. Keep in mind that you'll be interviewing for a position in one of these fields after you graduate-ask questions that will help you in the interview. Stay in contact with the professional you've met and keep a written record of your discussions-these will help you when you begin interviewing.

CHAPTER SEVENTEEN

SELLING YOURSELF, GETTING THE JOB YOU WANT

"It's been hard enough to get through school,", says Gary (Gros Ventre). "I really don't know which employers are hiring in my field so I'll wait and see what the University of Montana posts as positions available." Gary knows he's one of a very few Native students who is trained to work in environmental science. He also knows that this field is important to his tribe but doesn't know how to go about finding work with the right organization.

Getting a job right out of your bachelor's degree work may be one of the most frustrating experiences you'll encounter if you're not aware of the many steps it takes to get the job you want. You'll have to make several important decisions while you're still working toward your undergraduate degree and when you start interviewing for that special position.

Perhaps you've learned that you'll need to go onto graduate school and get your master's degree or doctorate. If so, there are plenty of graduate schools that will want you. You'll have to do the same type of research that you did when you were looking for a college for your undergraduate work.

On the other hand, you may decide that your Bachelor of Science degree is enough for you for now and that you'd like to get directly into the workforce. This chapter is designed to help you find-and get-a job you'd like. Starting your career is like planning for the courses you took as an undergraduate-every job you work at should build upon one another.

How do I go about looking for a job?

Finding a good job has never been an easy task but there are several things you can do to lessen the stress associated with it. The first is to believe in yourself and your accomplishments; know that employers are looking for people like you.

Second, allow enough time to look and find the job you'll really be happy with. You should begin looking for employment during your first semester/quarter of your senior year. In considering the job you'd like to have you'll have to define the balance that you would like to have with your work, finances, health, and relationships with family, friends, and colleagues.

The third is to identify employers that you'd like to work with. You'll have to begin by carefully selecting the type of workplace that fits your needs. Work environments are extremely important and may determine whether you make it or not. Employers are all different: Some require employees to work long hours but provide high salaries; some encourage creativeness among employees but mean creativeness within the existing structure; some workplaces acknowledge the whole person-body, mind, and spirit-and provide a workplace that allows employees to thrive. You'll have to analyze each potential employer in relation to the type of workplace they offer.

You'll need to prepare a resume-with a cover letter-that employers will find attractive and compelling. Some job seekers mistakenly think that a resume doesn't necessarily have to be accompanied by a cover letter. This is one of the biggest mistakes first-time job hunters make and one that will determine whether or not you receive an interview.

A fifth step is to prepare yourself for the interview by anticipating questions and answers. Many job hunters make the mistake of setting up several interviews but don't think about what the employers will ask them-or what they will ask the potential employers. You'll have to do some research here.

Finally, you'll have to do some follow up to the job hunting process. Thank you notes are important parts of the job-seeking process and should always be part of it. The thank you letter lets the employer know that you appreciate the time they've given you and can also serve to gently remind the employer to follow up on your application. We'll cover these areas, one at a time.

What do you mean, "sell" myself?

You have to enter the job market with marketable skills like leadership, effective communication, and the ability to work well in a team. Your undergraduate classes, extra-curricular activities, and study experiences should provide you with a good start on developing these skills. Your challenge during the job-seeking process is to communicate-sell-yourself by conveying these skills to the potential employer.

What you might want to do before you begin the job-seeking process, is to develop a list of all your leadership and team activities to date. One example: your academic and teamwork may be illustrated in your role as chairperson for a panel discussion in one of your classes. Another example may be that you organized a picnic for new transfer students and

their families. The list is endless but it will be your responsibility to begin preparing this list well in advance of your actual job hunting.

The bottom line: You can't sell yourself to a potential employer if you don't believe in yourself. All aspects of the job-seeking process-the preparation of your resume, the cover letter, your interview presentations, and the thank you letter-must be of high quality and reflect your ability and commitment to do the job.

How do I find the organizations I'd like to work with?

There are several resources you can use to find a suitable employer. One of the best ways of finding good employers is to talk to people who work in your career field. All organizations have developed good or bad reputations; employees in the field usually know who the best employers are. You'll have to develop a set of questions for the people who you'll ask, ask the questions, and follow through on those employers you become interested in. You'll also have to weigh how the employer will promote the balance- finances, health, and relationships with family, friends, and colleagues-you'll need in your life.

Other good resources include the volumes of professional directories that are available through professional organizations and publishers. *The College Board Guide to 150 Popular College Majors* contains a selected listing of mailing addresses-update annually-for professional organizations in science, mathematics, engineering, and technology.

Finally, the Internet is a wonderful resource for employment opportunities. There are countless web sites that include job listings; some allow you to enter your resume. But be careful if you're interested in placing your resume on the Internet. Developments on the Internet are moving so fast that privacy issues are not yet protected. You'll have to weigh the importance of providing information about you and your qualifications to an employer with your rights to privacy.

How do I prepare a resume?

Preparing a resume is one of the most important aspects of job seeking. Ideally, you should begin "creating" your resume during your first year of undergraduate work and add on to it every time you give a paper at a professional conference or get a paper published. Your resume represents who you are and what your benefits to the employer can be. You might want to develop your resume and read through it as though you were the potential employer.

There are a variety of different types of resumes that range from the academic to the one-page. The type of position you're seeking will dictate the type of resume you'll prepare and send out for employment. In academe, for example, resumes are generally longer than the same resumes for industry and business.

There are many resources available for writing resumes including books, videos, and online employment agencies. Go to your campus library and find books that deal with the preparation of resumes for your field. Go to your college's employment placement center to view available videos and take extensive notes on writing good videos. If you have access to a computer-and most college students do-go online and conduct a search for "resumes" or "writing resumes."

Using a computer to write your resume is the fastest and most efficient way of getting the resume to look exactly the way you want it to. The reason: you can enter and delete information quickly and even prepare different versions of your resume for different employers-business, industry, academe, tribal employment, and federal employment.

If you're interested in getting some help in the preparation of your resume, contact "Voicenet" at http://www.voicenet.com or "The Resume Center" at http://www.resume-center.com. These days, you can also post your resume online but be careful here. Make sure you post only the information that you want to have anyone and everyone to have. If you're interested in posting your resume online, contact "Yahoo" at http://www.yahoo.com/science/biology/employment/individual/resumes. The American Indian Science and Engineering Society (AISES) also has a resume service, free-of-charge to students.

Are cover letters really necessary? And how important are they?

Many employers don't even look at a resume without a cover letter. The reason: employers are very busy and use cover letters to decide-in as little as 20 seconds-whether or not they're interested in you as an employee. If the employer see something in the cover letter that is interesting, they'll usually take a look at your resume. The difference between your resume and your cover letter is that your professional capabilities are summarized in your resume; your cover letter identifies the job you're seeking and personalizes your application to the employer.

Most cover letters should be individually prepared but if you're using a computer, you can develop a form letter that has the same information in all but one paragraph. That one paragraph will have to be personalized to specific employers and should convey your knowledge and inter-

est in the specific employer. If you use the form letter approach to cover letters, don't forget to personalize each address also!

What makes a Good Cover Letter?

The cover letter is what the employer will see first-before reading your resume and before meeting you. It's up to you to write it in such a way that the employer will be interested in reading your resume and interested in hiring you! Write your cover letter then put it away and go on to other things. Then, a day or two later, read it as a prospective employer would and ask:

Is this cover letter interesting?
Does it grab and hold my attention?
Are there any typographical or grammatical errors in it?
Why would I hire this person for the position?
Would I like to know more about this person through an interview?
Is it addressed to fit the job description?
Have I addressed it to the right person at the right company? (This can really be a pitfall of "form" letters-forgetting to change the form to fit the company can kill your chances for an interview).

The cover letter should represent you and should be written the way you speak. If you use a computer to prepare the letter, there is usually grammar and spelling checks built in-good news for anyone who writes! So, first, you should write the letter the way you talk, then put it down, read it a few days later, and ask yourself the questions above. This should increase your chances of getting an interview.

How do I prepare for an interview?

Remember that your role in the interview is twofold: to sell yourself to the interviewer and to find out if the job will fit your professional needs. Just because you receive an interview doesn't mean that you have to accept the job offer if it's not good for your career. Interviewing for employment is never easy and is always stressful. You must be prepared to handle any question.

Start preparing for an interview by "brainstorming" questions that you would like to have answered. You might include other students, family members, and your advisor in developing a list of questions potential employers may ask you and questions you may ask the employer. Here are a few general interview questions that employers may ask you:

Your background-here, you'll need to focus on your professional or academic background. Keep as much of the personal information as you

can out of this discussion. If this is your first job out of college, talk about the positive aspects of other summer or part-time jobs. Focus your discussion around your role as a leader, mentor, and team player-even if your job really didn't require these skills. For example, if you've worked at McDonald's restaurant, talk about how you enjoyed working with other employees, how you handled any crisis, and how you helped customers. If you've had other jobs related to your profession, talk directly about the positive aspects of the job, especially in relation to leadership, mentoring, and teamwork. Never talk about negative experiences!

Your strengths and weaknesses-be prepared to address your strengths and weaknesses. One way to prepare for this is to ask other students, family members, and your advisor to be honest in helping you identify your strengths and weaknesses. Admit both but try to state your weaknesses in terms that can be viewed as strengths from the employer's perspective. Stick to the facts, not your judgements. Emphasize your interest in long-term commitments.

Your knowledge of the employer's firm and job position-what do you know about the employer's company? You should have done research here before going into the interview. But if you don't know much about the company, don't say you don't know; say that you'd like to learn more. When asked about the job you're applying for, try to think of the job in terms of leadership, mentoring, and teamwork. Talk about the job in relation to your academic or professional goals and objectives.

Your expectations of the job-here again, keep your discussion positive and focus on the opportunity to grow, learn, contribute, etc. If you're applying for an entry-level job, you might indicate that you'd like to move up the career ladder within the company but that you'd like to stay with your entry-level job for a few years.

Questions you might ask the employer might include:

The job responsibilities and line of authority-ask who your supervisor will be and what type of performance evaluation you'll have as well as how often your supervisor and you will meet. Try to convey your real interest in the position and be positive about everything you learn.

Salary, business hours, and employer expectations-some employers will state business hours as 8:00 a.m. to 5:00 p.m. but expect that employees will stay longer, sometimes much longer, than the business hours. This is especially true for jobs that deal with deadlines. Ask the employer what the expectations of this position are and what the salary is for this

job. Keep in mind that you're trying to find a position that suits your needs and those of the employer.

Finally, be on time for the interview (even 15 to 20 minutes early). Dress conservatively and carry the list of questions you've developed above with you. Be prepared to ask all of the questions you've prepared and more-you'll have to allow for unexpected questions from the interviewee or employer. Respond positively and with enthusiasm to any and all questions and keep a sense of humor!

What about follow up? Are thank you letters necessary?

It might not seem important to send thank you notes to the employer after an interview but it is. By sending a thank you letter, you're really telling the employer that you appreciate the time they've spent with you. The thank you letter also offers a perfect means for reminding employers that you're very interested in the position you interviewed for and that you'd like to hear from them soon. Employers are usually very busy, especially when they're interviewing for a position. The thank you letter might just remind them of your interview and get you that much closer to getting the job.

KEY POINTS:

* Believing in yourself is the first step to getting that job you want.
* Remember that you're looking for a job you'd like and one that fits your needs.
* The Internet offers countless opportunities for employment placement but be aware of privacy issues and determine how much of your background you'd like to share.
* Cover letters and thank you notes are almost as important as your resume so be sure to address the cover letters and thank you notes to the right person at the right company.
* Start a resume your first year in college and update it biannually. It's hared to remember all of your accomplishments over a four-year period.

CHAPTER SUMMARY:

Resources-print, non-print, and online-for finding and getting the job you want are identified and discussed in this chapter. We also provide tips for anticipating questions during the interview and remind you that job seeking includes finding a balance between the employers needs and your needs.

CHECKLISTS:

RESEARCHING THE JOB MARKET
Ask questions like:

1. Have I done the research to identify the employers in my field that are hiring?
2. Have I checked with colleagues in my field?
3. Have I gone online to find potential employers?
4. Have I checked with my college's employment placement office?
5. Have I made a decision as to whether I will relocate to any town, city, or state?
6. Have I identified employers whose needs will balance with mine (I'm a single parent of three, does this job require a lot of travel)?

WRITING THE RESUME
Ask questions like:

1. Have I identified an appropriate resume format?
2. Have I included everything I've done professional, even if I consider it minor, in the first writing of my resume?
3. Have I reviewed my resume several times to check for typos, inaccurate dates, job titles, etc.?
4. Have I asked professionals in the field to write letters of recommendation for me so that I can list them as references?
5. Have I checked with the resources through the Internet to get ideas about how to write my resume?

WRITING COVER LETTERS
Ask questions like:

1. Have I written the cover letter the way I speak?
2. Have I kept the length to one page?
3. Does the cover letter represent what I can do for the specific company?
4. Have I put the cover letter away for a few days?
5. Have I used the questions listed in this chapter to finalize the cover letter?
6. Have I addressed it to the right person at the right company?

CHAPTER EIGHTEEN

BRINGING IT ALL TOGETHER: WHAT'S BEEN SAID HERE?

Lorree is an Arikara high school student who enjoys the outdoors and nature. She spends quite a bit of her time thinking about how the earth continues to replenish herself when so much is taken from her daily. Rather than enrolling in the Fort Berthold Community College, Lorree decides to take a job right out of high school that will place her in the forest. She gets a good paying job with the U.S. Forestry Service and is happy; the money's great!

Somehow, Lorree realizes that she has many more questions about the relationship between the earth and its inhabitants than her job will provide her answers. An elder in her tribe suggests that she take classes at the tribal college to learn more. Lorree follows that advice and today is an independent consultant that helps local and state governments deal with land reclamation and waste disposal. She also conducts environmental impact studies that help Native people.

Touch the Sky is written for you! We hope that this handbook has provided information necessary for a smooth transition for you-from either high school to college or from tribal or community college to a four-year institution. Here's a summary of the information presented in *Touch the Sky:*

Tribal colleges are extremely important to your success in higher education. If you happen to be one of those students currently enrolled at tribal colleges, you'll already know the importance of tribal colleges in your higher education plan. You'll probably also know the importance of talking with your advisor at the tribal college and that your advisor is one of the most important people in the transfer process. Most tribal colleges have tutoring and transfer programs that will help prepare you for getting your bachelor's degree in science, mathematics, engineering, or technology and help you prepare for and make the transition to the four-year university. Tribal college advisors should be able to tell you whether the four-year university you're interested in has an "articulation agreement" in place so that your credits will transfer to the four-year university.

More and more Native students enroll in and graduate with degrees in science, mathematics, engineering, and technology every year. Decisions you make in high school regarding the courses you take are very important to your future. Your family and friends are also extremely important influences in what your career may be. Research has found that early and middle school experiences in science and mathematics and strong support programs that respect family and tribal ties are crucial to

success in all majors in college. Today, employment opportunities for graduates in science, mathematics, engineering, and technology have widened to include government, business, industry, tribal communities, and academe.

Planning for a career in science, mathematics, engineering, and technology should begin at the high school level with a heavy emphasis on science and math courses. Your high school counselor and tribal college advisor/mentor are two of the most important people in developing your career. You must establish and continue a good relationship with your two-year advisor and ask that he/she continue to serve as your mentor when you transfer to the four-year institution.

If your courses don't transfer and you think they should, appeal. If you don't agree with the receiving college's assessment (your new four-year college), there are usually appeals processes in place that you can use. Always work with your advisor at the community college to determine whether or not the courses you are taking will transfer. Most of the tribal colleges are accredited-or working toward accreditation-which means that most the courses (except some electives) you take during your two years at the tribal college are considered to be equal to four-year courses taken at a four-year university. There are three areas that college credits fall into: general requirements, requirements for the major, and electives. As a general rule, prerequisite courses/requirements for your major at the four-year university will transfer

Getting admitted to a four-year university takes a lot of hard work and planning. There are no promises that you'll be admitted to a four-year university. If you have a computer, go online and get copies of your new college's deadlines for application. Begin planning for your transfer at least six months ahead. Always meet the timelines and deadlines set by your new college. When you complete your written admissions process, always make at least two copies of your admissions information. Work with your community college advisor well before the actual admissions process.

If you need financial aid, begin applying for it early. Not all financial aid must be paid back but you'll have to check on all sources. Your tribal office is one of the best sources of financial aid information. You might want to start your search for financial assistance at your home agency. Begin your financial aid planning one year before you actually plan to go through the admission process at your new transfer college. Be prepared to meet a variety of deadlines and don't assume that these deadlines are flexible. Don't assume that funding agencies will notify you of upcoming deadlines. Keep a file with all of your transfer information-financial aid,

admissions information, your latest federal income tax information, etc.-in one place and make sure you can access this file at any time.

Students who have taken more academic courses and who have earned good grades receive, on average, higher scores on the college entrance exams than students with fewer courses and lower grades. Preliminary practice exams for the SAT I and II are available to you during your early years in high school. You'll need to check with your transfer college to see what entrance exam the school requires. One of the primary reasons for making it through a baccalaureate degree in science, mathematics, engineering, and technology is the influence of family and friends. Medical school admission requirements vary from school to school but there is a publication, the Medical School Admissions Requirements, that spells out each medical school's requirements.

The climate on your new campus is very important to your success. Anticipate and be prepared to encounter a different cultural and social environment from the two-year college you're used to. In selecting your transfer college, remember that the quality of the "climate" on your new campus is one of the most important factors in determining whether you'll stay on campus and graduate. Remember that you have a right to a quality education. If you think you're not getting a quality education, speak with a minority affairs representative about your concerns and work with Native American clubs on campus to get the problem resolved. The idea of sober living is getting to be quite popular on campuses across the country. If you're interested, check with the housing office on your new campus to see if you can participate.

Begin planning for the registration process with your two-year follow-through advisor well in advance of registration time. When you get to campus, get a copy of the student newspaper or the college catalog immediately. All of the necessary information will be included in these publications. Registration information-deadlines, fees, etc.-for the next semester will be printed in the student newspaper or posted at the Native American student office about the middle of your current term. Keep on top of the deadlines and meet them. Develop a tentative course schedule with your tribal college advisor before you get to campus-just in case some of the courses you and your advisor planned for you to take aren't available. With the help of you family and two-year advisor, you should determine when you perform at your best-then try to schedule your classes around your "peak" hours (early morning, mid-day, late afternoon, or evening classes).

Efficient communication skills are required. Everyone-from student to business person-has fought with the idea of speaking and writing. But

communication is the most important skill for success in the American society. Stereotyping is the easiest thing we can do-it takes hard work to understand and accept people and their differences. There are many different kinds of communication-all different types summarize who you are and what your background is. You cannot, not communicate. Even silence is a form of communication.

Doing "research" simply means that you're investigating all possible avenues of a topic that interests you. When you transfer to the four-year university, your community college advisor should be involved in your "research" for the transfer college as well as actual research topics/papers that you do during your four-year university experience. Other students may well serve as collaborators in your research. Be sure to check with the instructor of the class you'll be doing the research for. There is a research methodology that you'll have to know and use in doing your research. Check with your faculty member or advisor to get a copy of research guides. In defining your research topic, you may want to contact your tribe to see what areas your tribe needs research done on.

University faculty and staff members will be different from community college faculty and staff but that's not bad. If you get a chance to take a transfer class or program at your community college, you should enroll in it. This will help you anticipate the differences you'll encounter at the four-year university. Remember that university faculty and staff are employees of the four-year institution because they truly want to see students succeed. If you don't understand something in class, or in general about the university, ask someone who will know the answer. Your follow-through mentor/advisor should be contacted regularly during the first few months on your new campus. They will be able to help you adjust to life at the four-year university.

Surviving college is easier than it sounds, as long as you plan and work with the resources available to you at the four-year university. The administrative structure of the university defines how long and how complicated a reaction to student questions may be. Most four-year institutions are large and have many different offices and departments. Work with your advisor(s)at the four-year campus: you'll have a "formal" advisor and probably a few "informal" advisors. Managing your money is an important component of survival on the four-year campus. Stay away from getting and using credit cards while you're on campus. There are many resources available to you like the College Survival Handbook and the handbook for parents, Preparing for College Early.[36]

The key to success in higher education is to manage your time wisely and develop good study habits. Develop a plan that includes long-range goals and short-term objectives and make your plan a realistic one. If some of your classes are so technical that they're boring, use a common marketing strategy-turn a disadvantage into an advantage-and focus on the interesting aspects of the class. Identify and become familiar with all the resources on campus that will help you succeed in higher education. If you establish or join a study group, your chances of success improve.

Communication, leadership, and mentoring skills are interrelated. Working with other students helps to develop leadership and team skills-highly valued assets in today's job market. Skills involving leadership, teamwork, and mentoring are interrelated. Some of the clubs and associations on campus can help you build your leadership, team, and mentoring skills. Check them out. You can use the Internet as a means of developing your teamwork and communication skills by working with other students via the Internet.

Believing in yourself is the first step to getting that job you want. Remember that you're looking for a job you'd like and one that fits your needs-not just a job that you can get. There's a lot of hard work involved in getting through school and getting the job you want. All of the skills you'll learn as an undergraduate should be applied when you get to the workforce. Be sure to do your research and remember that the Internet offers countless opportunities for employment placement. Also remember that cover letters and thank you notes are almost as important as your resume to the potential employer.

Like everything in life, it'll take a lot of hard work to touch the sky and reach for your dreams. You'll encounter many different situations but remember that you're the consumer and you don't have to accept anything less than you want. In addition to finding a university that offers the baccalaureate degree in your chosen field, you should look for those higher education institutions that have a proven track record as far as climate.

One of the most important messages of this handbook is that you can make the transfer experience easier by relying on your follow-through advisor. Take advantage of services that are offered at your tribal college such as tutoring, transfer programs, computer training, etc. and involve your tribal college advisor in every aspect of the transfer process. Remember to plan ahead for everything: Don't wait until the last minute to file your forms for application, financial aid if you need it, admission, and class selection. Check out housing possibilities well in advance of your move.

Finally, believe in yourself and follow your dreams. Consider that we live in a "time-driven" world and adapt to it-if just for your academic and professional life. Remember, that everything worth wanting is worth working hard for. Know that there are a lot of people behind you-who want you to succeed and excel in whatever career you choose!!

NOTES

[1] Boyer, Paul. Native American Colleges: Progress and Prospects. An Ernest Boyer project of the Carnegie Foundation for the Advancement of Teaching. San Francisco: Jossey-Bass, Inc. Publishers, 1997: 68-69.

[2] National Science Foundation. Selected data on Graduate Students and Post-doctorates in Science and Engineering: Fall 1995.

[3] All Nation's Alliance for Minority Participation. Indicators of Progress/ Achievement. Spring, 1997.

[4] National Science Board. Science and Engineering Indicators-1989. Task Force on Women, Minorities, and the Handicapped in Science and Engineering, Final Report. Washington: U.S. Government Printing Office, 1989. (NSB 89-1)

[5] _____. Science and Engineering Indicators-1989.

[6] U.S. Office of Technology Assessment Technical Memorandum, December, 1985.

[7] Reprinted by permission from The College Board Guide to 150 Popular College Majors. Copyright (c) 1992 by the College Entrance Examination Board. All rights reserved.

[8] The College Board. The College Handbook for Transfer Students: 1991. New York: Guidance Publishing. 1991.

[9] This definition is adapted from a 1992 publication, Mentoring: An Essential Factor in the Doctoral Process for Minority Students, by Howard. G. Adams, p. 2.

[10] Information in this section, is adapted from The College Board's 1991 The College Handbook for Transfer Students.

[11] Higher Education Publications, Inc. 1997 Higher Education Directory. Falls Church: Higher Education Publications. 1997.

[12] American Indian Science and Engineering Society. Winds of Change Annual College Guide for American Indians. Boulder: AISES Publishing, Inc. 1997.

[13] BIA/OIEP also provides funding to students through a contract with the American Indian Graduate Center in Albuquerque. All fields of study are given consideration with priority to Business, Engineering, Health, Law and Natural Resources. For general information about the Indian Higher Education Grants for undergraduate and graduate students, call 1-202-401-1902 or 1-202-208-7163, fax 1-202-208-6334, or write to US Bureau of Indian Affairs, Office of Education, 1849 C Street, NW, Washington, DC 20240-0001. The phone number for the BIA Office of Public Affairs is 1-202-219-3711.

[14] For more information, call 1-301-443-6197, fax 1-301-443-6048, (call 1-301-443-3396 or fax 1-301-443-4815 for the loan program), or write to Indian Health Service, Scholarship Program, Twinbrook Metro Plaza, Suite 100, 12300 Twinbrook Parkway, Rockville, MD 20852.

[15] For more information and an application, call 1-520-680-0839 or write to Mrs. Jackie Ross, National Chairman, American Indians Committee, 3738 South Mission Drive, Lake Havasu City, AZ 86406-4250.

[16] There are basically two programs available to veterans. The Chapter 32 V.E.A.P. (Veteran's Educational Assistance Program) which is a contributory educational plan for those who entered active military service after December 31, 1976 and before July 1, 1985. The Chapter 30 or Montgomery G.I. Bill is for those who entered active duty after July 1, 1985. A veteran must have an honorable discharge to be eligible for Chapter 30 benefits. This does not have the effect of law, so for further information it is best to contact the Veteran's Administration at toll free 1-800-342-4790.

[17] This collection of Internet links was taken from an online listing by Mark Kantrowitz. Internet 1994-1997. Please be aware that online listings change frequently. The information provided here is accurate as of January 1998.

[18] The ACT today serves consumers around the world and while it still serves colleges, ACT today also provides services to K-12 education and educational agencies, plus to business and industry. While it still develops and administers tests, ACT also provides a broad range of supplementary materials and services. And, rather than a single program, ACT today offers over 100 programs and services to millions of customers. The ACT program can be reached at ACT Program (ACT) P.O. Box 168; Iowa City, IA 52243.

[19] This College Board change responds to a report, "Beyond Prediction (Bok and Gardner, 1990) that highlights the need "to reinforce sound curricular policies and good study habits in high school by devising tests that emphasize substantive knowledge as well as general ability while calling for skills of problem-solving, writing, and the like."

[20] National Science Foundation. Committee on Equal Opportunities in Science and Engineering. Washington: NSF. 1985.

[21] Nearly all U.S. medical schools require applicants to attempt the MCAT before applying for admission. The MCAT Student Manual provides specific information on the format and scoring of the test as well as sample questions and a practice examination. The packet contains complete instructions for taking the test as well as answer keys. Practice Test II and III, released operational test forms, are also available. These packets include a scoring key, a table for converting raw scores to scaled scores for each test, and a set of additional practice items. All examinees are strongly urged to refer to the MCAT Student Manual and the Practice tests to ensure that they are adequately prepared for the examination. Registration materials for the April 18, 1998 and August 15, 1998 MCAT administrations may be obtained by contacting: MCAT Program Office, P.O. Box 4056, Iowa City, IA 52243, (319) 337-1357.

[22] A 1985 National Science Foundation report finds that the nature of the college environment was the most important predictor of success-or failure-for minority students in the fields of science and engineering ("Persistence in Science of High-Ability Minority Students").

[23] These categories are discussed in a 1992 publication by the American Council on Education (ACE), Environments of Support. Pgs. 35-45.

[24] See for example, a 1993 publication by Pimetal that discusses services offered by Wellness Program at University of Massachusetts at Amherst and provides some background on origin of sober housing program for students. The publication also investigates satisfaction level of student participants in this program.

[25] Dr. Wayne Stein and his staff provided us with valuable information. We have cited several components from the Montana State University's Indian program brochure throughout this publication.

[26] See, for example, Zunin, (cited in Saint Damian and Valentine's 1994 publication).

[27] Taken from Webster's New World Compact School and Office Dictionary. Simon and Shuster.1989.

[28] The MLA Handbook is a guide that is used extensively in undergraduate work and serves as an excellent source material for graduate school.

[29] This survey was conducted by the American Institute of Chemical Engineers in 1995.

[30] The Carnegie Report by Paul Boyer takes a comprehensive look at tribal colleges.

[31] AISES was created by American Indian scientists, engineers, and educators in 1977 and helps American Indian students prepare for careers in science, technology, engineering and business. Winds of Change magazine's "Annual College Guide for American Indians" is published annually and is an excellent resource for tribal college students. AISES is a membership organization and sponsors a conference each November where several thousand American Indian high school students and their teachers, college students, professional members and representatives of major corporations and federal government agencies gather in celebration of achievement, opportunity, cultural identity and spirituality. AISES sponsors many more academic, cultural, and social events nationwide. For more information, contact: AISES, 5661 Airport Blvd., Boulder, CO 80301-2339 (303) 939-0023 Fax: (303) 939-8105 (Web address: http://bioc)2.uthscsa.edu/aisesnet.html (e-mail: aiseshq@spot.colorado.edu).

[32] If you've selected a four-year institution that has a Native American club, chances are that you'll gather together to talk with friends, meet other Indian students, talk to Indian Club advisors, work on school projects, use typewriters and computers, listen to music, have a home away from home, use phone for emergency calls, meet with other students for lunch-there may be a refrigerator, microwave, and pop machine, read reservation newspapers, and attend Native American orientation.

[33] *NEA Higher Education Advocate,* pg. 1, May, 1997.

[34] To order a copy of the All Nations AMP video of Native professionals in Science, mathematics, engineering, and technology, write to: Salish Kootenai College, All Nations AMP, PO Box 117, Highway 93, Pablo, MT 59855 (telephone: 406-675-4800 and web site: http://skcweb.skc.edu/amp/index.html.

[35] Reprinted by permission from *The College Board Guide to 150 Popular College Majors.* Copyright (c) 1992 by College Entrance Examination Board. All rights reserved.

[36] *The Ultimate College Survival Guide* by Worthington and Farrar is listed in the resource section of this handbook as is the U.S. Government publication, *Preparing for College Early. (Preparing for College Early* answers such questions as: Why is going to college important? What jobs can you get with a college education? What courses should college-bound middle and junior high school students take? What guidance and support are available for families? How much does college cost? Where can families and students apply for financial aid? Contact: Cindy Balmuth, Peter Kickbush, and Kirk Winters at the U.S. Department of Education, e-mail: kirk_winters@ed.gov).

APPENDIX A

SELECTED RESOURCES

Print:

Adams, Howard G. *Focusing on the Campus Milieu: A Guide for Enhancing the Graduate School Climate.* Notre Dame: National Consortium for Graduate Degrees for Minorities in Engineering and Science, Inc. 1993.

Adams, Howard G. *Making the Grade in Graduate School: Survival Strategy 101.* Notre Dame: National Consortium for Graduate Degrees for Minorities in Engineering and Science, Inc. 1993.

Adams, Howard G. *Mentoring: An Essential Factor in the Doctoral Process for Minority Students.* Notre Dame: National Consortium for Graduate Degrees for Minorities in Engineering and Science, Inc. 1992.

American Association for the Advancement of Science. Edited by Shirley M. Malcom, Yolanda S. George, and Virginia V. Van Horne. *The Effect of the Changing Policy Climate on Science, Mathematics, and Engineering Diversity.* Washington: American Association for the Advancement of Science. 1996.

American Council on Education. *Environments of Support.* (Office of Minorities in Higher Education). Washington: American Council on Education.1992.

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All Nations Alliance for Minority Participation. Bick, Jaymee. *Degree Pathway Analysis: Linking the Tribal College Student to the Ph.D. in the Science, Engineering, and Math Fields.* (Special report for the All Nations Alliance for Minority Participation). Pablo, MT: Salish Kootenai College.

American Institute of Chemical Engineers. *Initial Placement of Chemical Engineers Survey.* New York: American Institute of Chemical Engineers. 1995.

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Brown, Marj and Patti Miller. *Center for Native American Studies Handbook.* Bozeman: Montana State University. 1996.

California State University. *Academic Challenges: Cross-Cultural Perspectives in the Curriculum. Academic Program Improvement.* Los Angeles: California State University. 1990.

Chronicle of Higher Education. *Almanac* (published annually). Washington: Chronicle of Higher Education.

College Entrance Examination Board. *The College Board Guide to 150 Popular College Majors* (updated annually). New York: Guidance Publishing.

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Diversity/Careers In Engineering and Information Technology: The Publication for Technical Workforce Directory. Volume III, Number 7, Winter 1995/Spring 1996.

Education Commission of the States. *New Strategies for Producing Minority Teachers.* Denver: Education Commission of the States. 1990.

Education Trust. *Education Watch:* The 1996 Education Trust State and National Data Book. Washington: The Education Trust. 1996.

Gibaldi, Joseph. *MLA Handbook for Writers of Research Papers.* (4th Ed.). New York: The Modern Language Association. 1995.

Gladieux, E. "The Student Loan Quandary: Are there Workable Alternatives?" *Change Magazine.* May/June 1989: 35-41.

Hawes, Gene. *The College Board Guide to Going to College While Working.* New York: College Entrance Examination Board. 1985.

Higher Education Publications, Inc. *1997 Higher Education Directory.* Falls Church: Higher Education Publications. 1997.

Lee, Valarie E. and Kenneth A. Frank, "Student Characteristics that Facilitate the Transfer from Two-Year to Four-Year Colleges". *Sociology of Education 63* (July, 1990): 178-193.

Mortenson, Thomas. G. *The Reallocation of Financial Aid From Poor to Middle Income and Affluent Students 1978 to 1990.* (ACT Student Financial Aid Research Report Series). Iowa City: ACT. 1990.

National Academy of Sciences. *Careers in Science and Engineering: A Student Planning Guide to Grad School and Beyond.* Washington: National Academy of Science. 1996.

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U.S. Department of Education. *Promising Practices in Mathematics and Science Education: A Collection of Promising Educational Programs and Practices from the Laboratory Network Program.* Washington: Office of Educational Research and Improvement.

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Wechsler, Harold. *The Transfer Challenge: Removing Barriers, Maintaining Commitment.* Washington: Association of American Colleges. 1989.

Worthington, Janet Farrar and Ronald Farrar. *The Ultimate College Survival Guide: Dorm Life, Hitting the Books, Tests and Profs, After Hours.* Princeton: Peterson's. 1995.

Zunin, Leonard with Natalie Zunin, "Contact: The First Four Minutes." In *First Impressions,* by Banisa Saint Damian and Carol Ann Valentine. Tempe: Communication Consultants. 1994. Originally published (Los Angeles: Nash Publishing.1972).

Online:

AAAS Next Wave (http://www.NextWave.com): Job listings from Science magazine and career trends in science.

CareerMosaic (http://www.CareerMosaic.com): Contains job listings and allows posting of resumes. (Benard Hodes Advertising, International Herald Tribune)

Chronicle of Higher Education (http://www.chronicle.com): An extensive listing of academic positions and related openings.

College Grad Job Hunter (http://www.jobhunter.com): Job search information and advice, with links to online job postings for college student and graduates. (Quantum Leap Publishing)

Job Center Employment Service (http://www.JobCenter.com): Links to employment listings in many different industries. They have profiles of companies and allow the posting of resumes.

JobServe (http://www.JobServe.com): Openings primarily in the UK and Europe.

JobWeb (http://www.JobWeb.com): Career planning and employment information, job-search articles, job listings, and company information.

The Monster Board (http://www.MonsterBoard.com): Career information, tips for finding the "hottest jobs", job listings and employer profiles. (TMP Worldwide)

Online Career Center (http://www.careercenter.com): Job listings, company information and posted resumes. Managed by a non-profit employers association.

Peterson's Education Center (http://www.petersons.com): Peterson's plans to develop an education center on the web offering general career information and advice, information about organizations that are hiring, and job postings in different career areas.

The Riley Guide (http://www.dbm.com/jobguide/): Employment opportunities and job resources on the Internet compiled by Margaret F. Riley, coordinator of network resources at Worcester Polytechnic Institute.

Student Affairs Virtual Compass (http://www.StudentAffairs.com): is the most comprehensive index available of Internet resources for college student affairs professionals. Under one umbrella, it offers information on and links to over 600 listservs and websites.

APPENDIX B

ALL NATIONS ALLIANCE FOR MINORITY PARTICIPATION PARTNERS

WASHINGTON

Tribal Colleges (1):
Northwest Indian College is accredited by the Northwest Association of Schools and Colleges to provide Associate of Arts and Sciences degrees, Associate of Technical Arts degrees, Associate of Science degrees and certification programs. A college catalog for 1996-98 is available. Write: 2522 Kwina Rd, Bellingham, WA 98226, (360) 676-2772 Fax: (360) 738-0136.

Washington Universities: *University of Washington, Washington State University, and Western Washington University*

MONTANA

Tribal Colleges (7):
Blackfeet Community College is accredited by the Northwest Association of Schools and Colleges to provide Associate of Arts degrees, Associate of Science degrees, Associate of Applied Science degrees, and certificate programs. A college catalog is available for 1996-98. Write: PO Box 819, Browning, MT 56417, (406) 338-5441 Fax: (406) 338-7808.
Dull Knife Memorial College is accredited by the Northwest Association of Schools and Colleges to provide Associate of Arts degrees, Associate of Applied Science degrees, and certificate programs. A college catalog ("Living the Vision") is available for 1996-97. Write: PO Box 98, Lame Deer, MT 59043, (406) 477-6215 Fax: (406) 477-6219.
Fort Belknap Community College is accredited by the Northwest Association of Schools and Colleges to provide Associate of Arts degrees. A catalog is available for 1996-97. Write: PO Box 159, Harlem, MT 59526, (406) 353-2607 Fax: (406) 353-2829.
Fort Peck Community College is accredited by Northwest Association of Schools and Colleges to provide Associate of Arts and Associate of Science degrees. A college catalog is available for 1995-97. Write: PO Box 398, Poplar, MT 59255-0398, (406) 768-5551 Fax: (406) 768-5552.
Little Big Horn College is accredited by the Northwest Association of Schools and Colleges to provide Associates of Arts degrees and certificate programs. A college catalog is available for 1997-99. Write: PO Box 370, Crow Agency, MT 59022, (406) 638-2228/(406) 638-7211 Fax: (406) 638-7213 (Web address: http://main.ibhc.cc.mt.us). Salish Kootenai Col-

lege is accredited by the Northwest Association of Schools and Colleges to provide Bachelor of Arts degrees, Bachelor of Science degrees, Associate of Arts degrees, Associate of Science degrees, Associate of Applied Science, and certificate and apprenticeship programs. A college catalog is available for 1997-99. Write: PO Box 117, Pablo, MT 59855, (406) 675-4800 Fax: (406) 675-4801. (Web address: http://skc.edu).

Stone Child Community College is accredited by the Commission of the Northwest Association of Schools and Colleges to provide Associate of Arts degrees, Associate of Science degrees, and certificates. A college catalog is available for 1996-1998. Write: RR 1, Box 1082, Box Elder, MT 59521, (406) 395-4313 Fax: (406) 395-4836.

Montana Universities: *Montana State University-Northern Rocky Mountain College, The University of Montana-Missoula, and Montana State University-Bozeman.*

KANSAS

Tribal Colleges (1):

Haskell Indian Nations University is accredited by the Kansas Board of Education for junior college status and for its Bachelor of Science degree in elementary education. Haskell is also accredited by the North Central Association to provide associate and bachelor's degrees in elementary education. A college catalog is available for 1996-98. Write: 155 Indian Ave, Lawrence, KS 66046, (913) 749-8450 Fax: (913) 749-8406.

Kansas Universities: *University of Kansas*

NORTH DAKOTA

Tribal Colleges (5):

Fort Berthold Community College is accredited by the North Central Association of Colleges and Schools to provide Associate of Arts degrees, Associate of Science degrees, Associate of Applied Science degrees, and vocational certificates. A college catalog ("Bulletin") is available for 1996-97. Write: PO Box 490, New Town, ND 58763, (701) 627-3665 Fax: (701) 627-3609.

Little Hoop Community College is accredited by the North Central Association of Colleges and Schools to provide Associate of Arts degrees, Associate of Science degrees, Associate of Applied Science degrees, and certificate programs. A college catalog is available for 1997-98. Write: PO Box 269, Fort Totten, ND 58335, (701) 766-4415 Fax: (701) 766-4077.

Sitting Bull College is accredited by the North Central Association of College and Schools to provide Associate of Arts degrees, Associate of Science degrees, Associate of Applied Science degrees, certificate pro-

grams, and Bachelor's degrees (in conjunction with Minot State University and Sinte Gleska University). A college catalog ("Bulletin") is available for 1996-98. Write: HCl, Box 4, Fort Yates, ND 58538, (701) 854-3861 Fax: (701) 854-3403.

Turtle Mountain Community College is accredited by the North Central Association of Colleges and Schools to provide Associate of Arts degrees, Associate of Science degrees, Associate of Applied Science degrees and vocational certificates. A college catalog is available for 1996-97. Write: PO Box 340, Belcourt, ND 58316, (701) 477-5605 Fax: (701) 477-5028.

United Tribes Technical College is accredited by the North Central Association of Colleges and Schools to provide Associate of Applied Science degrees and certificate programs. A college catalog is available for 1996-97. Write: 3315 University Drive, Bismarck, ND 58504, (701) 255-3285 Fax: (701) 255-1844.

North Dakota Universities: *North Dakota State and the University of North Dakota.*

SOUTH DAKOTA

Tribal Colleges (4):

Cheyenne River Community College is accredited by the North Central Association of Colleges and Schools to provide Associate of Arts degrees and Associate of Science degrees. A college catalog for 1995-1997 is available. Write: PO Box 220, Eagle Butte, SD 57625, (605) 964-8635 Fax: (605) 964-1144.

Oglala Lakota College is accredited by the North Central Association of Colleges and Schools to provide Associate of Arts degrees, Bachelor of Arts degrees, Bachelor of Science degrees, and one Master of Arts degree. A college catalog is available for 1996-1997. Write: PO Box 490, Kyle, SD 57752, (605) 455-2321 Fax: (605) 455-2787.

Sinte Gleska University is accredited by the North Central Association of Colleges and Schools to provide Associate of Applied Science degrees, Associate of Arts degrees, Bachelor of Arts degrees, Bachelor of Science degrees, certificates and Master of Education in Elementary Education degrees. A college catalog is available for 1995-97. Write: PO Box 490, Rosebud, SD 57570, (605) 747-2263 Fax: (605) 747-2098.

Sisseton Wahpeton Community College is accredited by the North Central Association and by the South Dakota Board of Nursing (for the nursing program) to provide Associate of Arts degrees, Associate of Science degrees, Associate of Applied Sciences degrees, and certificate programs. A college catalog is available for 1997-99. Write: PO Box 689, Sisseton, SD 57262, (605) 698-3966 Fax: (605) 698-3132 (web address: http://swcc.cc.sd.us), e-mail: swcc@daknet.com.

South Dakota Universities: *South Dakota School of Mines and Technology, South Dakota State University, and University of South Dakota.*

NEBRASKA

Tribal Colleges (1):
Nebraska Indian Community College is accredited by the North Central Association of Colleges and Schools to provide Associate of Arts degrees, Associate of Science degrees, Associate of Applied Science degrees. A college catalog is available for 1997-98. Write: PO Box 752, Winnebago, NE 68071, (402) 837-5078.
Little Priest Tribal College is seeking accreditation with the North Central Association of Colleges and Schools and currently has negotiated an agreement with Wayne State College, an accredited sponsoring institution. A college catalog is available for 1996-97. Write: PO Box 270, Winnebago, NE 68071. (402) 878-2380 Fax: (402) 878-2355.

Nebraska Universities: *NONE*

MINNESOTA

Tribal Colleges (2):
Fond du Lac Tribal and Community College is accredited by the Commission of Institutions of Higher Education of the North Central Association of Colleges and Schools to provide Associate of Arts degrees, Associate of Science degrees, and Associate of Applied Science degrees. A college catalog ("A Union of Cultures") is available for 1995-97. Write: 2101 14th St, Cloquet, MN 55720, (218) 879-0800 Fax: (218) 879-0814 TDD: (218) 879-0821 or 1 (800) 657-3712 (web address: http://www.fdl.cc.mn.us).
Leech Lake Tribal College is accredited by the North Central Association of Colleges and Schools and by the Commission on Schools for its adult and vocational education programs. Degrees offered include an Associate of Arts degree and an Associate of Applied Science degree. A college catalog is available for 1995-97. Write: Rte 3 Box 100, Cass Lake, MN 56633, (218) 335-2828 Fax: (218) 335-8309.

Minnesota Universities: *Moorehead State University and the University of Minnesota-Duluth.*

WISCONSIN

Tribal Colleges (2):
College of the Menominee Nation is accredited by North Central Association of Colleges and Schools to provide Associate of Arts degrees and Associate of Sciences degrees. A college catalog is available for 1996-97.

Write: PO Box 1179, Keshena, WI 54135, (715) 799-5600 Fax: (715) 799-1326.

Lac Courte Oreilles Ojibwa Community College is accredited by the North Central Association of Colleges and Schools to provide Associate of Arts degrees and Associate of Applied Science degrees. A college catalog is available for 1995-98. Write: Route 2, Box 2357, Hayward, WI 54843, (715) 634-4790 Fax: (715) 634-5049.

Wisconsin Universities: *University of Wisconsin-Madison.*

MICHIGAN

Tribal Colleges (1):

Bay Mills Community College is accredited by North Central Association of Colleges and Schools to provide Associate of Arts degrees, Associate of Science degrees, Associate of Applied Science degrees, and certificate programs. A college catalog is available for 1997-99. Write: 12214 West Lakeshore Drive, Brimley, MI 49715, (906) 248-3354 Fax: (906) 248-3351.

Michigan Universities: *Central Michigan University and Lake Superior State University.*

ABOUT THE AUTHOR

Rebecca L. Robbins, Ph.D. is an independent consultant who works out of her home in Montana. Currently, Dr. Robbins is working as a team evaluator for the W.K. Kellogg Foundation's Native American Higher Education Initiative. Prior to establishing her own consultant firm, Dr. Robbins served as the editor of higher education publications for the National Education Association in Washington, DC where she either wrote or edited all of the monthly, semi-annual, and annual publications for NEA members in higher education.

Prior to her work with NEA, Dr. Robbins served as a faculty member of the Arizona State University and taught undergraduate courses in intercultural communication and multicultural education and graduate courses in education theory. She's also held directorships with ASU's American Indian Leadership Graduate Program and with Project MEDIA, a national project through the National Indian Education Association.

Dr. Robbins' research focuses on analyses of intercultural communication, specifically between Native and non-Native people in the United States. Dr. Robbins is a member of the Standing Rock Sioux Tribe.

All Nations Alliance for Minority Participation (ANAMP) Vision Statement

The vision of the All Nations AMP is to promote a holistic view and deeper understanding of science for a sustainable earth by: integrating cultural knowledge and practices with western sciences and incorporating cross cultural respect for spiritual beliefs and knowledge. This will lead us to the full realization of diversity.

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