Cover photo: Forest Service North Central Forest Experimental Station, Forest Sciences Laboratory located adjacent to the Forestry/IWR building. (Photo by Dumroese)

Opposite page: A Swiss “Menzi-Muck” machine adapted as an experimental, small tree, steep terrain, feller-buncher goes through the rigors of testing. (Courtesy of U.S. Forest Service)
A Note From the Editor

The publication this year started out with a single goal: prepare a quality annual that will reflect the activities of the students, faculty, and alumni. We have attempted to meet that goal by giving more recognition to the students of the department by providing increased space to the clubs, adding the Dean's List, placing more information with the graduates, more candid, and some original artwork in the form of drawings, cartoons, and photographs. We also added a new article, "Research at Tech," that focuses on the never ending research in which our faculty is involved. Also, we have added two new articles for the alumni that we hope you find of interest. The first, "Alumni Reviews," looks at the careers of three graduates since leaving Tech. The second, "Alumni News," is a brief update on what is happening with many of the alumni.

Many thanks must go to the people who assisted this "rookie" editor in preparing this yearbook. I would especially like to thank my staff for their unending dedication and enthusiasm, Dr. Crowther for his support and confidence, Eric Beckert and Laura Snyder for their artwork, Tim Trombley for his skill in the darkroom, the volunteers who helped with the final layout, and everyone else for their cooperation and patience with my continual hassling. Special thanks must also go to Rodger Arola and his staff at the Forest Service for providing the feature article and the accompanying photographs.

Through the gracious support of the department, we were able to send each alumnus a copy of the 1982 Forester. We will be unable to do this each year due to the tremendous costs. It is our hope that each of you will take a serious look at the Forester and consider whether it is worthy of your continued support. If you believe it is, please fill out the form located in the advertisement section and return it with what you consider an adequate donation. This will also entitle you to a copy of the alumni register.

I hope you enjoy this year's edition as much as the staff has enjoyed preparing it for you.

Kas Dumroese
Editor-in-Chief
A forest engineering personnel conducts a work measurement study of a tracked whole tree feller-buncher. (Courtesy of U.S. Forest Service)
Our '82 Salute goes to Dennis Baril, whose practical knowledge and skills contribute importantly to the Department's teaching programs and many student activities.

Dennis, who joined the Department in 1973 as a technician, was named a teaching assistant in 1981. Originally he was given responsibility for the storage, care, maintenance and assignment of departmental field equipment such as compasses, power saws, tree planting bars and tree surgery tools. These duties, however, soon proved to be minor in relation to many other tasks and services he was asked to perform in furtherance of teaching, research and extracurricular activities of the faculty and students.

In particular, Dennis has been of great assistance to the Forestry Club through participation in the club's pulpwood cutting operations, maintenance of power saws, handling the club's snowshoe care and rentals, and in many other ways.

Soon Dennis was given responsibility for instruction of laboratory work in the Municipal Forestry course, including safety training and techniques in tree climbing and tree surgery. He also assists in laboratory preparation and equipment use in several other courses. In these capacities, Dennis has become one of the most valued and relied-upon members of the Department.

Dennis was born in Lake Linden and graduated from Lake Linden High School. While in high school he starred in basketball and was named the team's Most Valuable Player.

Upon completing high school, Dennis enrolled in the Forestry Technician program at MTU. After earning the Associate in Applied Science degree, he accepted work with Mead Corporation and was located at Trout Lake, Michigan. He was employed by Mead for six months before joining the Forestry Department staff.

Dennis married Bonnie Waarala in 1970. The couple have three children, Laura, 11, Gregg, 8, and Jay, 5.

At home, Dennis has many interests. He engages in carpentry and enjoys outdoor activities such as cutting firewood (with help from Gregg and Jay) and shares with Bonnie an interest in cross country skiing.

Dennis also is very active in the affairs of his church, Lake Linden United Methodist, which he serves as Sunday school superintendent.

For his many contributions to the Department's educational programs, student organization activities and all-around services, the Forester gratefully extends its Salute to Dennis Baril.
At home with Bonnie, Laura, Gregg, and Jay.

Denny and Bonnie on their wedding day.

Negotiating the price of a donut (Photo by Therrien).

Denny "at work" in his office (Photo by Dumroese).
News of the Department

Dr. Lindo J. Bartelli took over the reins of leadership as Head of the Forestry Department in January, 1982. He succeeded Prof. Charles E. Hein, who served as Acting Head for the previous six months. Dr. Bartelli’s appointment coincided with the retirement of Dr. Eric A. Bourdo as Dean of the School of Forestry and Wood Products. Dr. Bourdo was granted a sabbatical leave in August, 1981. The position of Dean is to be left vacant for the present. Dr. Bartelli has served since last summer as Acting Director of the Ford Forestry Center. He joined the departmental faculty as an Adjunct Professor in March, 1977. At the time of his appointment, he had completed a distinguished career with the U.S. Soil Conservation Service and was Director of the Soil Survey Interpretations Division, in Washington, D.C., at the time of his retirement from the SCS.

Dr. Bourdo’s retirement completed the “end of an era” transition begun with the earlier retirement of Professors Vernon Johnson, Hammer Steinhab, and Dr. Gene Hesterberg. Eric’s career with Michigan Tech began as a Forestry student in 1939. He graduated in 1943, and in 1946 joined the Forestry faculty as an Instructor. In 1955, Dr. Bourdo became Director of the newly established Ford Forestry Center, and in 1958 was named Dean of the School of Forestry and Wood Products at MTU.

Curriculum revision has been a topic of much attention during the past year. The Option program of the Forestry curriculum has been terminated, and students are to be given more flexibility in scheduling elective courses. The core requirements, necessary for meeting federal Civil Service and accreditation standards, are retained.

New areas of study, aimed at development of courses in fields offering greater potential for future employment of forestry graduates, also are being investigated.

In a major change of administrative structure, the Ford Forestry Center last spring was merged into the Department of Forestry. This facility, headquartered at Alberta, 35 miles southeast of Houghton, no longer is designated the Ford Forestry Center. It will henceforth be known as the Ford Forest.

Activities of the unit will continue much as before, except that the Forestry Technician program of the School of Technology will be transferred to the main campus. Research in forestry and soils will continue as before.

A new position, Coordinator of Research, has been established, and a search has begun for a person to head the research effort at the facility.

Roger Rogge, who has served as Manager of Operations for the past 12 years, will take a position on the main campus.

Beginning last summer, the instruction of Forestry Summer Camp was returned to Alberta.

Summer Camp had been taught at the Center from 1956 until 1967, when the program was moved to the Houghton campus. Facilities at Alberta, which had become inadequate for the Summer Camp group in the mid-1960’s, now are ample for current enrollees. The experience of the 1982 summer campers will be reported in the next issue of the Forester.

The past year has been one of stringency for the Forestry Department, as it has for Michigan Tech and the State of Michigan. These difficulties result from a decline in student enrollment in forestry, severe funding constraints on the University due to cutbacks in State funding, and the generally depressed economy of the State. Nevertheless, Departmental operations continue to function normally with only minor adjustments.

Several facility modifications have also taken place at the Ford Forest. The two buildings which formerly housed the administrative offices and the forestry research personnel have been shut down, with these operations being consolidated in other space. The former herbarium has been converted into administrative and laboratory offices, and the adjacent building modified to accommodate research offices. These consolidations have been effective in minimizing operation costs at the Ford Forest.

New personnel hired during the past year include Thomas Divney, a forest soil scientist working with the Soil Research Laboratory, and John Pearson, a plant physiologist and growth modeling specialist who recently joined the Computer Applications group. David Andersen moved to the Ford Forest from the Forestry Department to coordinate the Logger Safety Training Program.

The research staff of the Ford Forest has had a busy and productive year. James Johnson has been conducting the 25-year measurement of the Continuous Forest Inventory plots. He spoke recently at the Biomass Energy Seminar, Northern Michigan University, and also presented a paper at the timber stand improvement seminar at Michigan State University.

Dr. Stephen Shetron has continued research efforts in mine reclamation, effects of timber harvesting equipment on soil compaction, and in forest soil productivity and forest fertilization. He made a presentation on the nutrient levels in sugar maple contrasted to soil properties at the annual ASA-SSSA meeting in Atlanta, Ga., and also presented ideas for the reclamation of mine spoils at the NCR Work Planning Conference in North Dakota recently. His article “Properties and Vegetative Stabilization of Cement Bag House Dust” appeared in the Florida Institute of Phosphate’s proceedings of the International Symposium on Phosphogypsum.

The staff of the Soil Research Laboratory has been involved in research studies involving forest soil characterizations with interpretations for forest
management. Carl Trettin has been active in Michigan Soil Survey committees and has served as Research Coordinator of the Cooperative for Research on Forest Soils, an industrial-based cooperative working with MTU to support forestry research. He also traveled to Atlanta, Ga., to attend the annual meeting of the ASA-SSSA, where he presented a paper. Eunice Steidinger also presented a paper at this meeting. Laboratory staff also conducted two training seminars for soil scientists in the state.

The Computer Applications group has been developing Computerized Operational Inventory Systems for forest management, Computerized Mapping for USFS resource information, and also developing growth and yield equations for Continuous Forest Inventory Plots and lumber yield equations for sawlogs. Julia Kucab has been working on her Ph.D. at the University of Michigan during the past year. Julia, along with Dave Wilson, attended a workshop in Maine in August where Julia presented a paper. Mark Anderson attended the Harvard Computer Graphics Week, a workshop on computer graphics. He and Dave Wilson also traveled to Kentucky in September to attend the annual meeting of Midwest Mensurationists on the topic "Computers in Forestry."

Dave Andersen has developed the Logger Safety Training Program for the Michigan Department of Labor and has also written an informational booklet for the industry, the Loggers’ Safety Handbook. A sawmill safety videotape was also developed as part of this program.

The Peat Resource Estimation in Michigan project has been coordinated by Gary LeMasters during the past year. The fieldwork has employed several students during the summer and Gary has continued to work on data analysis and reporting during the winter. Gary presented a paper at the ASA-SSSA meetings in Atlanta, Ga., in December, and gave a talk at the Michigan Academy of Sciences in March. In April, he spoke at the Michigan Alternate Energy Board’s symposium at NMU.

Four faculty members resigned during the past academic year. They are Dr. Yuan-Zong Lai, Dr. James Armstrong, Donald Schwandt and Robert Ross. Dr. Lai joined the faculty at Syracuse University. Dr. Armstrong took a teaching post at the University of West Virginia. Mr. Schwandt accepted a position with Champion International Corporation, and Mr. Ross enrolled in doctoral study at Washington State University.

On the plus side, Dr. Martin Jurgensen returned from a year’s leave of absence during which he engaged in research in New Zealand. Three new faculty assistants were appointed. They are David Hamlin, Margaret Gale and Daniel Miller, all of whom hold M.S. degrees from Michigan Tech. Dave and Margaret have strong backgrounds in mathematics and computer applications in forestry, and Dan specializes in the area of wood and fiber utilization.

Also, Irvin Ziemer was promoted from Faculty Assistant to Visiting Instructor, and Dennis Baril, formerly Departmental Technician, was appointed a Teaching Assistant.

The Forestry Department now has three professors holding “adjunct” rank. Rodger Arola, project leader of the Forest Service’s Forest Science Laboratory located adjacent to the Forestry Building, became an Adjunct Professor in July. Others are Dr. Michael J. Larsen, Adjunct Associate Professor, who holds a research position at the Forest Products Laboratory, Madison, Wisconsin, and Dr. Alan Harvey, Adjunct Associate Professor, a project leader with the Intermountain Forest and Range Experiment Station, at Moscow, Idaho.

Faculty members continued their activity in research and other professional work. Prof. James Meteer was named Chairman of the Michigan Society, Society of American Foresters; Dr. Richard Crowther served as Vice President of the MTU Faculty Senate and as Chairman of the Forestry Section, Michigan Academy of Science, Arts and Letters. Dr. Margaret Herman was Co-Chairperson of the Fish and Wildlife Section, Michigan Academy.

Dr. Bartelli has been appointed to the National Research Council to serve on a committee reviewing the work and accomplishments of the soil conservation agencies. In addition, he serves as an advisor to the Mexican Soil Science Society.

Research activities of the faculty are reviewed elsewhere in this issue. Presentations at scientific and professional meetings include those by Dr. Bernard Sun at Washington State University; Dr. Herman at the University of Wyoming, the Michigan Academy, and at meetings of the Michigan Trappers Association and the Upper Peninsula Chapter, Society of American Foresters; Prof. Robert Sajdak at the North Central Weed Control Conference, Des Moines, Iowa; Dr. John Kotar at a Soil Scientist Workshop and at the Michigan Academy; Prof. Meteer at the Lake States Deer Management Group meeting, and Glen Mroz and Margaret Gale at the Lake Superior Biological Conference.

Dr. Jurgensen co-authored three scientific publications. One was published in Forest Service; the others were published by the Intermountain Forest and Range Experiment Station, U.S. Forest Service.

Among Dr. Herman’s publications are a Wildlife Society Bulletin, articles in the Canadian Field Naturalist, National Wildlife and Proceedings of the Third International Conference on Wildlife Telemetry. She also co-authored a report for the Michigan Department of Natural Resources.

Dr. Rosewell Miller was field judge at the Midwestern Foresters’ Conclave hosted by the University of Michigan.

Dr. Miller, Charles Hein, I. D. Wijayarantane and Gerald Allan also attended meetings of state and national land surveying societies.

Dr. Roswell Miller has been appointed to the State Board of Foresters as a professional member by Governor William G. Milliken. Pending Senate confirmation, Dr. Miller will serve on the board for a term expiring March 31, 1986.
Forestry Faculty and Staff

Dr. Lindo J. Bartelli
Head, Department of Forestry
B.S. Michigan State Univ.
M.S. Michigan State Univ.
Ph.D. Univ. of Illinois

Dr. James P. Armstrong
Assistant Professor
B.S. Pennsylvania State Univ.
M.S. State Univ. of New York, Syracuse
Ph.D. State Univ. of New York, Syracuse

Gerald M. Allan
Instructor
B.S. Michigan Tech. Univ.
M.S. Michigan Tech. Univ.

Dr. Johann Bruhn
Assistant Professor
B.S. Utah State Univ.
M.S. Univ. of Michigan
Ph.D. Michigan Tech. Univ.

Dr. Eric A. Bourdo
Dean of Forestry and Wood Products
B.S. Michigan Tech. Univ.
M.S. Univ. of Michigan
Ph.D. Univ. of Michigan

Dennis A. Baril
Teaching Assistant
A.A.S. Michigan Tech. Univ.
Dr. C. Richard Crowther  
Professor  
B.S. Iowa State Univ.  
M.S. Iowa State Univ.  
Ph.D. Univ. of Michigan

Charles E. Hein  
Assistant Professor  
B.S. Michigan Tech. Univ.  
M.S. Michigan Tech. Univ.

Dr. Margaret F. Herman  
Assistant Professor  
B.A. Colorado College  
M.S. Washington State Univ.  
Ph.D. Univ. of Montana

Dr. Martin F. Jurgensen  
Professor  
B.S. Syracuse Univ.  
M.S. Syracuse Univ.  
Ph.D. North Carolina State Univ.

Margaret Gale  
Faculty Assistant  
B.S. Michigan Tech. Univ.  
M.S. Michigan Tech. Univ.

David Hamlin  
Faculty Assistant  
B.S. Michigan Tech. Univ.  
M.S. Michigan Tech. Univ.

Dr. John Kotar  
Assistant Professor  
B.S. Univ. of Wisconsin  
M.S. Univ. of Minnesota  
Ph.D. Univ. of Washington
Dr. Yuan-Zong Lai
Associate Professor
B.S. National Taiwan Univ.
M.S. Univ. of Washington
Ph.D. Univ. of Washington

James Meteer
Professor
B.S. University of Michigan
M.F. University of Michigan

Dr. Roswell K. Miller
Associate Professor
B.S. Syracuse Univ.
M.S. Syracuse Univ.
Ph.D. Univ. of Michigan

Daniel W. Miller
Faculty Assistant
B.S. Michigan Tech. Univ.
M.S. Michigan Tech. Univ.

Glenn D. Mroz
Instructor
B.S. Michigan Tech. Univ.
M.S. Michigan Tech. Univ.

William Perkis
Research Associate
B.S. Michigan Tech. Univ.
M.S. Michigan Tech. Univ.

Robert L. Sajdak
Associate Professor
B.S. Michigan Tech. Univ.
M.S. Univ. of Minnesota
Donald L. Schwandt  
**Instructor**  
B.S. Michigan Tech. Univ.  
M.S. Michigan Tech. Univ.

Kathleen R. Slattery  
**Laboratory Assistant**  
B.S. Michigan Tech. Univ.

Dr. Bernard C. H. Sun  
**Associate Professor**  
B.S. National Taiwan Univ.  
M.S. Univ. of British Columbia  
Ph.D. Univ. of British Columbia

Dr. Norman F. Sloan  
**Professor**  
B.S. Michigan Tech. Univ.  
M.S. Univ. of Wisconsin  
Ph.D. Univ. of Wisconsin

I. D. Wijayarante  
**Instructor**  
B.S. Univ. of Ceylon  
M.S. Ohio State

Irvin R. Ziemer  
**Visiting Instructor**  
B.S. Michigan Tech. Univ.  
M.S. Michigan Tech. Univ.

Verna J. Berner  
**Executive Secretary**  
Dean's Office

Carol B. Isola  
**Typist**

Mary Frantti  
**Administrative Aide**
Ford Forest Faculty and Staff

Dr. Stephen G. Shetron
Professor
Research Soil Scientist

David E. Andersen
Coordinator, Logging Safety Program

Mark A. Anderson
Research Forester/Systems Analyst

Clayton Warner
Research Associate

David W. Wilson
Research Forester/Systems Analyst

James A. Johnson
Research Forester

Eva Myron
Secretary

Carl C. Trettin
Assistant Research Scientist

Dr. Lindo Bartelli
Acting Director

Tom Divney
Research Associate

Roger L. Rogge
Manager of Operations

Eunice Steidinger
Research Associate
Ralph G. Duffek  
Assistant Professor

William Bertie  
Assistant Professor

Thomas L. Kelley  
Assistant Professor

Sharlene J. Kannainen  
Typist

James P. Dougovito  
Training Specialist

Bernard W. Carr  
Associate Professor  
Coordinator

Julia S. Kucab  
Assistant Research Scientist  
Project Leader

Not Pictured:

Edward W. Stephens  
Faculty Assistant

John Pearson  
Research Associate
Dear Alumni:

Greetings from the School of Forestry, Michigan Technological University. I am the new head of the Forestry Department and represent part of the changes that have taken place. The Dean’s office has been discontinued. The Institute of Wood Research reports directly to the Director of Research. The Ford Forestry Center has been made part of the Forestry Department and will be known as the Ford Forest. We are searching for a coordinator who will lead the research carried on by the Ford Forest and the on-campus staff of the Department. The function at the Ford Forest will be primarily research. Summer camp also will be conducted at the Ford Forest. All of this is part of the University plan to live within the limits of a restricted budget imposed on us by the Governor.

Also, I want to acquaint you with the young men and women graduating in Forestry. We are proud of our graduates, they too are on their way to becoming top foresters. I hope that along the line somewhere you, as a potential employer, will look at this year’s graduates who are well-trained, eager to prove themselves, and with great potential.

Both our research and teaching programs continue to grow and are becoming important parts in developing forest industry in Michigan. Many of us are looking to forestry to rejuvenate the ailing economy of Michigan.

Please keep in touch – we want to hear from you. We may even surprise you with a newsy letter about our graduates.

Best wishes for a peaceful and full life.

Sincerely,

Lindo J. Bartelli, Head
Department of Forestry
'81-'82 School of Forestry and Wood Products Graduates

Alpha Eta Chapter of Xi Sigma Pi is proud to endorse the Michigan Technological University Forestry Department graduates of 1981-82.

These graduates have diverse career interests and experience. All have received a well-rounded education. Each possesses a sound foundation upon which to build a career in forestry, wood products or land surveying.

The Michigan Tech curricula are demanding. To reach the position of earning a B.S. degree, these students had to prove their ability to learn.

As a student, I can offer assurance that each of these graduates is serious about entering a professional field, and is anxious to begin a career in his or her chosen profession.

I encourage you to look closely at the qualifications and interests of these graduates. Please contact the Department of Forestry for any further information desired.

Respectfully yours,

Brian Warner
President
Alpha Eta Chapter, Xi Sigma Pi

Ronald Brindley
Conservation
Schererville, IN

Richard Beckert
Wildlife Ecology
Saginaw, MI

Nicholas J. Bell
Wildlife Ecology
Houghton, MI

Bruce Bugbee
Industrial Forestry
Tecumseh, MI

Timothy H. Butler
Forest Entomology
Elkhart, IN

Robert Cain
Forest Entomology
Allen Park, MI
Thomas Hillman
Forest Management
Frankenmuth, MI

Hugh W. Hosafros
Forest Management
Laurium, MI

Kevin W. Johns
Forest Ecology
Farmington, MI

Russell W. Johnson
Industrial Forestry
Gladstone, MI

Melinda Kerry
Forest Management
Chillicothe, OH

David Kober
Forest Ecology
Delaware, OH

Joe Langkawel
Urban Forestry
Kingsford, MI

Alan Laurette
Land Surveying
Midland, MI

Rena L. Lautzenheiser
Land Surveying
Marshall, MI

Gregory R. Lewis
Industrial Forestry
Huntington Woods, MI

James E. Lindner
Wood Science and Technology
Cincinnati, OH

Robert Lindsay
Wildlife Ecology
West Bloomfield, MI
Robert J. Magon
Forest Management
Chicago, IL

Gary S. Marciniak
Forest Management
Land Surveying
Milwaukee, WI

Gail Marie Maule
Conservation
Traverse City, MI

Bonnie J. Mazur
Forest Entomology
Powers, MI

Brian McManus
Wildlife Ecology
Troy, MI

Elizabeth Person
Forest Management
Escanaba, MI

Thomas D. Potter
Recreation Resource Management
Livonia, MI

Timothy S. Purdy
Land Surveying
Florham Park, NJ

Mark Reichert
Forest Hydrology
Dayton, OH

Thomas A. Rosasco
Industrial Forestry
West Olive, MI

Mary Roth
Urban Forestry
Chicago, IL

David A. Sampson
Forest Ecology
Ann Arbor, MI
Kurt Voelkner  
Forest Management  
Conservation  
Duluth, MN

Brian Warner  
Industrial Forestry  
Cadillac, MI

Russell R. Wendell  
Forest Management  
Forest Soils  
Lincoln Park, MI

Mary M. West  
Forest Soils  
Gladstone, MI

Trinka A. Whitehead  
Urban Forestry  
Gland Blanc, MI

Kenneth Lee Wieciech  
Land Surveying  
Perronville, MI

Not Pictured

Robert E. Bessonen  
Mark S. Cramer  
Laurie S. Davis  
Todd S. Davis  
Martin J. Doris  
Michael J. Frash  
Rory W. Fuller  
Brian H. Getzelman  
Shelley M. Herring  
Mary E. James

Kenneth C. Howe  
Stanley Lank  
Ann L. Long  
Daniel W. Malueg  
Michael J. Powers  
Gail M. Simonds  
Eric Smith  
Jeffrey B. Stahl  
Teresa L. Wood  
Michael A. Zeller
Masters Graduates

Edward J. Alyanak
Forest Ecology

Robert O. Belcher
Forest Ecology

Gene W. Burks
Forest Ecology

Betty A. Perkis
Forest Soils

Kendal J. Phillips
Forest Management

Douglas A. Shown
Wildlife Management

Not Pictured: James J. Spindler
Andersen Conducts
Logger Safety Programs

David Andersen, a Forestry Department staff member for several years, took on a new assignment in August, 1981. He was named coordinator for a new logger safety training program sponsored by Michigan Tech, Bay de Noc Community College, Escanaba, and the Michigan Association of Timbermen. The one-year program was funded by a grant of nearly $200,000 by the Michigan Department of Labor.

Andersen, who made his headquarters at the Ford Forestry Center, conducted a series of safety meetings throughout Michigan's Upper Peninsula and northern Lower Peninsula. These workshops have been very well received by loggers, Dave reports.

The seriously high accident rate experienced by the logging industry in Michigan led to the establishment of this program. An additional incentive was the need to reduce the workmen's compensation rate for logging in Michigan.

The workshops, which were conducted by Andersen and Warren Groleau of Bay de Noc Community College, centered on protective equipment and clothing, and safe operation of chain saws. The new generation of safety clothing comfortably and economically helps protect the logger's health and investment. Included are ballistic nylon pads, steel-toed shoes, eye and hearing protection and safety headwear.

Power saw accidents account for the majority of reported injuries, Andersen noted. These include cuts from contact with a moving chain and injuries caused by falling branches and debris or rolling logs. Safe practices in felling trees and bucking logs were stressed.

The program also included sessions on safe operation of heavy harvesting equipment, sawmill safety, and publication of a logging safety handbook. In addition, Andersen made safety audits of logging operations, conducted preventive maintenance evaluations and programs, carried out fire loss prevention audits and programs, covered first aid training, prepared audio-visual programs for loan, and aided employers in developing their own safety policies and programs. Library materials also were made available on a loan basis.

An early accomplishment of the program has been action to reduce the workmen's compensation rate for the logging industry in Michigan.

Dave warns woodsmen of the dangers of kickback. (Photo by Crowther)

Preparing for a presentation at Tech. (Photo by Dumroese)
Corcoran Visits

Tom Corcoran (l), a 1955 graduate of M.T.U. and presently Professor of Forest Engineering and Forest Resources at the University of Maine at Orono, talks with Jim Meteer (m) and Kas Dumroese (r) during a visit to Tech. The purpose of Tom's visit was to assist M.T.U. in its initial review of the potential for a "highly visible" academic program in forest engineering. He evaluated and made recommendations upon the physical and the personnel resources, as well as the organizational structure, necessary to establish a forest engineering program capable of receiving national accreditation.

Student Advisory Committee

In order for the Forestry Department Administration to remain aware of the needs and opinions of the students, constructive criticism must be brought forth. The purpose of the Student Advisory Committee is to provide information, from the student body, to aid in decision-making related to the quality of education at Michigan Tech. The information provided by the Committee relates to curricular policy, departmental management procedures, and student affairs. It is not the purpose of the Committee to introduce matters concerning faculty or academic affairs.

Each curriculum and organization in the School of Forestry and Wood Products is well represented in the Committee. Assembling at the request of the Head of the Department are two representatives from each class in forestry, two representatives each from Wood and Fiber Utilization and Land Surveying, and one representative of the graduate students. In addition, one member from each of the following is included in the Committee: Wildlife Society, Society of American Foresters, Forestry Club, Forester, Xi Sigma Pi, Soil Conservation Society, Forest Products Research Society, and the student chapter of the American Congress on Surveying and Mapping.

— Brian Wilczynski
Dr. Bernard Sun is presently involved in research in various forms, but all dealing with the fundamental properties of wood and their response to diverse processing conditions. He is presently viewing the wood structure, especially the submicroscopic characteristics and cell wall structures, to see what effect heating and drying have on the final wood products. Bernie is also examining the effect of adhesives in the processing of plywood, particle board, and fiber board. He believes that better utilization of wood as an engineering material can be enhanced by the comprehensive understanding of the fundamental nature of wood.

Dr. Margaret Herman has been working on a Pine Martin reintroduction program with her husband, Lynn, for the past two years and should conclude this program this spring. A total of 166 animals were captured and released by the Hermans. The animals were trapped in Ontario, Canada, and transported and released in the western Upper Peninsula. The animals seem to be doing good so far and it looks as though a breeding population has been established. Due to tracking by use of radio telemetry, the Hermans have learned more about the habits of the Pine Martin which will benefit in the understanding of this curious little animal.

Other projects include a brainworm study. This study will be used in the determination of the possibility of moose reintroduction. If results are favorable for moose, Professor Herman will be involved in the reintroduction process of establishing a moose population in the Upper Peninsula.

Dr. John Kotar is presently involved in two research projects. One of these projects involves testing water stress of tree seedlings as a factor in plantation survival. Seedling survival is strongly influenced by internal water stress. Internal water stress is a function of root and shoot environments, which are greatly affected by nursery and planting procedures. This research deals mainly with red pine seedlings, since they are the primary tree species presently used in site conversion in the Lake States. The study utilizes a pressure-chamber apparatus to determine critical levels of water stress in these seedlings. By doing this, nurseries and planting crews will know what these critical levels are and can thus keep their seedlings from reaching this water stress level. The ultimate goal of the project is to help increase future seedling survival rates, and to develop a water stress monitoring system for use in commercial operations.

The second research project John is involved in deals with habitat classification in the Lake States. Habitat classification deals with delineating different habitat types by the identification of special indicator plant species. This classification can thus help in the management of these different habitat types. Currently, habitat classification in the Upper Peninsula, Northern Wisconsin, and Minnesota is done from a field guide made for the Western Upper Peninsula. The main objective of this research is to try to regionalize this field guide, since too much variation in conditions occurs over the current area, resulting in inaccuracies. The work involves first stratifying regions into those of similar geologic land forms and similar soil types. Then, intensive vegetative sampling takes place, preferably in stands that have been least disturbed. Tree productivity, silvicultural recommendations, and other such information is then fed to a computer which sorts it all in a process called ordination analysis. Thus, information on different sites is correlated with the type of vegetation found on each site. The result of the continuing hard work will be a field guide that will prove to be valuable in land management, and the entire regional forestry profession.

Dr. Norman F. Sloan is currently involved in two research projects. He is supervising a study on the effects of fire on birds and mammal populations in a grassland community, and is directly involved in an in-depth study of the Barred Owl. The first project is being conducted at Wind Cave National Park in the Black Hills of South Dakota. The park has conducted, for research purposes, some of the largest control burns within a park system. Last year they burned nearly 2,500 acres. Censuses of bird, small mammals, and plants were taken prior to
and after these burns. Mr. Douglas Sharon will complete a master's thesis on this project in the spring of 1982, and Mr. Jon Forde will continue this study for an additional two years.

An in-depth study of the Barred Owl at the Huron Mountain Club near Marquette, Michigan, has been in progress now for three years. Mr. Balazs Elody is currently working on the project for his master's thesis. To date, many birds have been radioed, and Sloan et al are following them in an attempt to find their nests. This past summer, twelve birds were captured and marked with federal leg bands, and a white tail feature was impeded to allow for easy observation.

Mycorrhizal fungus on tree root.

The U.P. forest industries plan to convert large acreages of "poor quality" northern hardwoods to conifer plantations. The root disease fungus Armillariella mellea is known to cause serious mortality to conifer seedlings under these circumstances. Two graduate students, Peter Allread and Patrick O'Brien, are working with Dr. Johann Bruhn toward the development of a predictive system for evaluating the risk posed by A. mellea to conifer plantations on different kinds of hardwood sites in the U.P.

Mycorrhizae are beneficial parasitic tree root/fungus associations which enhance tree growth and seedling survival. Mycorrhizal technology is being developed which will facilitate reforestation of harsh planting sites.

Logging damage associated with modern timber harvesting equipment is being inventoried and classified for 1) study of subsequent associated wood decay and discoloration, and 2) comparison of damage caused by different logging systems and equipment.

Peggy Gail, Dr. Martin Jurgenson, Dr. Yuan-Zong Lai, Glenn Mroz and Robert Sajdak are currently involved in several research areas. As Bob put it, "You can't just do a little research." The success of this group is that each member adds equally to the total effort, resulting in a more efficient group, hence a more efficient research project. Two of the group's main areas of research are closely related. The first area of research is the Biomass-Energy Program, featured in the 1981 Forester. This research is looking at the procedure and feasibility of converting poor quality hardwood forests into more efficient biomass plantations for fibre and energy. The second research area is concerned with the application and direct results of herbicide use in forestry. Examined in their testing is the timing and the application rate of herbicides. Additional emphasis is focused on the cost-benefit aspect of herbicide use and the effects on long term site productivity. They are also attempting to coordinate a Lake States Herbicide Cooperative that will aid in the transfer of information collected through research and past use to individuals and to members of the timber industry. The researchers are receiving aid in their project from the U.S. Forest Service North Central Forest Experiment Station, U.S.F.S. Southeast and Southern Experiment Stations, Champion International, and Mead Corporation.

Marty is also involved in a research cooperative with the Intermountain Forest Experiment Station of the U.S. Forest Service, located in Montana and Idaho. He is assisting in determining the long-term effects of steep slope timber harvesting on soil nutrient cycles. This marks his eighth season with the co-op, and Marty is hopeful for at least three more successful years with the program.

Aerial application of herbicides.
LaBumbard receives Loggers’ Scholarship

For the fourth year in a row one of Michigan Technological University’s junior forestry students has won one of two cash scholarships awarded students in four-year forestry programs by the Northeastern Loggers Association. The announcement was made jointly by George F. Mitchell, executive secretary of the Northeastern Loggers Association headquartered in Old Forge, N.Y., and by Dr. Roswell Miller, associate professor of Forestry, who coordinates the entries from Michigan Tech.

This year’s second place award of $500 was presented to Kevin J. LaBumbard, a student from Rapid River, Mich., for his scholastic achievement, work experience, and an essay submitted on the topic America: Wood Supplier to the World or Another Resource Crisis? LaBumbard is a dual major in forest management and industrial forestry who has maintained a 3.78 grade point average (4.0 scale) in forestry while attending Michigan Tech.

LaBumbard is the fifth Michigan Tech student to win one of the Northeastern Loggers Association scholarships since the contest was started in 1975. The contest is open to juniors in 21 four-year forestry schools and in the 25 states from Minnesota and Missouri to Maine and Maryland. The association’s membership comes from all phases of forest industry within this region.
Forestry Technicians

Freshman Class

Sophomore Class
Front row, left to right: John Retzky, Mary Graham, Steve Auger, Vianna Myles, Celeste Chingwa, Mary Feenstra, Jim Turnquist, Mary Jo Peterson, Todd Hebert. Back row: Tom Palmer, Joe Schroeder, Paul Pasternak, Glenn Tolksdorf, Jim Engel, Randy Knisely, Keith Ferrell, Bob McFadden, Barry Ritter.
Editor's note: In an attempt to make the Forester more newsworthy for our alumni, we have initiated a new article that briefly focuses on the activities of three graduates since leaving Tech. This year's alumni were chosen from a field of names provided by faculty. In the future, however, we hope the alumni will show an interest in this new endeavor and submit nominations for next year's article. Through your nominations, we will then select the alumni to be featured. Your cooperation will be appreciated and make this new article a continuing success.

John E. Force

As part of the 1982 alumni feature, we would like to review 1973 graduate John E. Force. John was born in South Haven, Michigan, and graduated from South Haven High School in 1962. He then attended Knox College in Galesburg, Illinois, graduating in 1966 with a B.A. degree in political science. In 1967, John completed basic and officer training school for the U.S. Air Force, and spent the next four and one-half years with the 341st Missile Wing at Malmstrom Air Force Base in Great Falls, Montana. While there, he obtained the rank of captain. In 1971, John began his studies at Michigan Tech.

John recalls many good things about his days at Tech. He like the instructors, especially the dynamic trio of Bob Sajdak, “Hammer” Steinheib, and Vern Johnson. He also recalls the turmoils of working in Bernie Sun’s wood tech lab and straining his eyes on Bernie’s infamous microslides. These memories are all part of us as MTU Foresters.

John is presently employed as a forest and land manager for Keweenaw Land Association, Limited. He lives and works out of Crystal Falls, Michigan. As a forest and land manager, John feels his job is vitally important in the Upper Peninsula. “With nine million acres of commercial forest land in the U.P., proper forestry practices can have very positive effects. It helps promote tourism, wildlife, and environmental values — all very significant contributions.” John feels that in the past, too much land planning was done without professional advice. By offering his advise on land management issues, John feels he is offering a service to the community and is upholding his professional values.

C'est la vie, John.

Kenneth P. Robert
Kenneth P. Robert came to Michigan Tech after receiving an Honorable Discharge from the U.S. Navy after four years of service. Ken was active in the Forestry Club during his schooling and served as vice-president one year. He graduated June 3, 1956, with a Bachelor of Science degree in Forestry. Six days later he married Carol M. Johnson in his hometown of Marinette, Wisconsin.

On July 1, 1956, Ken accepted the position of Field Forester with the Wisconsin Conservation Department (now the Wisconsin Department of Natural Resources) at Tomahawk, Wis. His duties included work on the Intensive Forest Service of Wisconsin’s Forest Lands in Florence, Marinette, Oconto, Price, and Lincoln Counties. Five months later he was promoted to Assistant District Forester and transferred to Madison, being headquartered at the Nevin Hatchery. With the opening of a new field office in Janesville in May of 1957, Ken transferred there to head the Forest Management Program, in Rock and Green Counties. He was promoted to District Forester on March 1, 1959, and transferred back to Madison. There he headed the Forest Management Program for the five county area of Southeastern Wisconsin. Four years later, Ken accepted the position of Section head with the Wisconsin Department of Agriculture, Plant Industry Division. His duties included supervising the Barberry Eradication Program and the White Pine Blister Ruster Control Program. He also served as a Staff Assistant to the Division Administrator in the areas of program budgeting and administrative management.

The Wisconsin State Board of Agriculture promoted Ken to the position of Plant Industry Division Administrator on May 1, 1969. The Plant Industry Division of the Wisconsin Department of Agriculture is a regulatory office overseeing all industry dealing with plants and their propagation. The division licenses all commercial seed producers, fertilizer manufacturing, and the processing and distribution of pesticides. The division is also involved in nursery inspections, the Shade Tree Program, and many other areas concerning the plant industry.

Ken also represents Wisconsin on the Central Plant Board. The board is an association of the 13 central United States. He is also on the Advisory Council of the National Plant Board.

Carol and Ken are the parents of three sons: Jeffrey Paul, 24; James Lee, 21; and David Andrew, 19. The Roberts now reside in Oregon, Wisconsin.

Arthur M. Arndt

Arthur M. Arndt graduated from Michigan Tech with a degree in Forest Management in 1951. After an intensive job search, he landed his first job with Consolidated Water Power and Paper Company of Wisconsin Rapids, Wis. He began work in the fall of 1951 as a forester out of a logging camp in northern Minnesota. This job provided Art with a challenge; an opportunity to apply many of the basics he learned here at Tech. Although the job paid very little, Art thought it was one of his most interesting since it gave him a chance to work with experienced woods workers and also to work with heavy equip-ment. He also learned he could function as a surveyor or timber cruiser in competition with the best from other universities.

After two years in northern Minnesota, Art transferred to Rhinelander, Wisconsin, assisting the company research forester and the company land surveyor. In 1954, he left Consolidated and moved to California. His first year there was eventful for him since he started working in an engineering capacity for the City of Long Beach, and he married his Canadian sweetheart, Pat Dooling.

After a year working for Long Beach, Art got a job with the County of Los Angeles Department of Forester and Fire Warden as a forester. Twenty-six years later, with four grown children, and Head Deputy Forester in a progressive urban forestry program, one finds this Tech forester still remembering his days in the woods and also his friends here at Tech.

Those years at our school, although oriented towards timber, proved to be adequate in the field of urban forestry. He feels that the programs of soil erosion control, conservation education, vegetative fire management, and watershed fire suppression that his department deals with, fit neatly into the urban and wildland interface.

According to Art, “A forester working in the city needs diversions.” His hobbies include photography, auto mechanics, and rock masonry. These may be an odd combination, but they are functional and provide a physical diversion.

Art sends his best regards to all his colleagues at Michigan Tech and across the continent.

The Forester would also like to extend its best regards to Art, Ken, and John, and all other alumni and their families.
Alumni News

Editor's note: Due to the tremendous response from alumni, we were unable to print every response. We received over 225 letters and more are still arriving as this goes to print. Additional responses will be printed in a newsletter that will be sent later in the year.

Charles W. Rollman, '41 - Thirty-five years of private land surveying practice with some forestry in Green Bay and northeastern Wisconsin ... Thomas J. Loring, '46 - Currently practicing forestry in Victoria, B.C. after 25 successful years with the U.S. Forest Service ... Adrian J. DeVriendt, '47 - Retired (11-30-77) and spending summers traveling by motorhome. Covered Alaska in the summer of '81 ... Einar Anderson, '48 - Retired in '81 after 30 years with Monsanto Co. Now enjoying the mountains in Sister, Ore. ... William L. Veese, '49 - Senior Vice President of Upper Peninsula Power Company in Houghton ... John R. Hornick, '50 - Currently the National Biomass Energy Coordinator for the U.S.D.A. Coordinating activities of the U.S.F.S., (use of wood for energy), interacting with the Dept. of Energy and Congressional Committees. Also, participating in national and international energy conferences ... Larry G. Watson, '51 - President of Ingersoll, Watson and McMachen, Inc., Civil Engineers and Land Surveyors. Son, Tom, currently studying C.E. at Tech ... Walter J. Thompson, '52 - Louisiana State Forestry Manager for Louisiana Pacific ... Douglas J. Koski, '53 - Land and Timber Manager for International Paper Co. Son, John, followed in his footsteps: 1981 Tech Forestry grad. Residing in Texas ... Paul L. Matson, '54 - Currently a forester for Washington's Dept. of Revenue, Forest Tax Section ... Dale P. Tubbs, '55 - Self-employed land management consultant in Alaska. Work is with state, borough and municipal governments, native corporations and private enterprise ... Robert M. Roch, '56 - Supervising fire control and forest management for the State of Wisconsin, with 26 years of service behind him. "Greetings to all my old classmates from 1950-56. God speed." ... Robert Christopher Peterson, '57 - Ph.D., Professor in the Paper Science and Engineering Dept. at Miami (Ohio) University. As Deputy Director for Research in the Institute of Environmental Sciences, he just completed a slide-tape program on Acid Rain, for which he also participated on the Governor's Scientific Advisory Task Force ... Lawrence D. Golin, '58 - As a physical therapist at Memorial Christian Hospital in Bangladesh, he is still experimenting in forestry. Growing plots of Carribean and Venezuelan Pines alternately with pineapple has proven successful ... Jack E. Horak, '59 - Currently on three-year Army Reserve Tour with the U.S. Army. Operations Officer of the Supply and Service Battalion in Wausau (Wis.), he was promoted to LTC in Oct. 1982 and is due to come off tour in February, 1984 ... Elaine (Mosher) Pearsons, '61 - Land surveying with husband in central mountains of Idaho. Also, a ten-year columnist for Horse of Course magazine. Raising and training quarter horses. Several weeks each fall are spent elk hunting in the Selway-Bitterroot Wilderness ... Christopher Nilson, '62 - Presently marketing his own feller-buncher tree shear under the CHRISTIAN TRADE name, with two U.S. and two Canadian patents. Also does consulting work, specializing in biomass utilization of small timber. Recently married, 1980, with one-year-old baby girl and living in Oregon.

Dale B. Stage, '63 - District Ranger at Laona on the Nicolet National Forest. Has been with the Forest Service, Region 9, for 19 years ... Carl H. Brousseau, '64 - Assistant Area Forest Manager on the Copper Country State Forest. Crystal Falls area for the State of Michigan, focusing on a captive flock of Angora goats and beef cattle ... Douglas M. Stone, '66 - Recently completed a two-year assignment with the U.S.F.S. as Research and Environmental Coordinator at the Dept. of Energy's Savannah River Plant in Aiken, S.C. Currently at North Central Forest Experiment Station at Bedford, Ind., working on an Oak-Hickory Silviculture Project ... David T. Warner, '67 - Part-owner of Pack Products, Inc., a manufacturers' representative firm that serves municipal, school and private markets in Wisconsin ... Joseph T. Weber, Jr., '68 - Has worked as a hydrologist in Tucson, Denver, Seattle and Anchorage, where he presently enjoys wilderness backpacking, cross-country skiing and fishing ... Ronald L. Hengster, '69 - Ph.D. Recently promoted to Field Station Manager for the Forest Management Research Group at Weyerhauser's Oregon Field Station ... Steve Siedentopf, '70 - Self-employed home remodeling contractor and private forester — selling firewood and improving small woodlots by TSI through A.S.C.S. office. Residing in Ohio ... Byron R. Sailor, '71 - Currently working as Forest Technician in the Au Sable State Forest in Gladwin, Mich. Previously in timber sales for Michigan DNR ... Walter P. and Christina S. (Klonka) Summers, '72 - District Conservationist for U.S.D.A. Soil Conservation Service and Secretary for Lodial, Inc., respectively. Spend weekends cruising 22' sailboat, "Selkie" ... Tom O'Connor, '73 - Soil Scientist Party Leader on the Sioux County Soil Survey. Residing with wife and two children in Iowa ... Steve Yancho, '74 - Park Ranger at Sleeping Bear Dunes National Lakeshore, Mich. ... Fred S. Wark, '75 - Working for a professional tree maintenance company serving Detroit's western suburbs. Also, owner of a chimney sweep service that's "really cleaning up!" ... William L. Roberts, '76 - Independent logger in Wakefield, Mich. He does all his skidding by horse power! ... John R. Hirschfeld, '77 - Recently finished M.S. at U. of Mass. Doctorate student at U. of Mass., Amherst, working with fungi that are pathogenic to insects. Looking for a program in soil-site, plant and soil relationships ... Shelley F. Mitchell, '78 - Educational Director at Dow Gardens in Midland, Mich. In charge of program development in horticulture, forestry, landscape, design and environmental education ... Stacey C. Ault, '79 - M.S. in Range and Wildlife Management from Texas Tech. Presently employed by S & R Environmental Consultants, contracted to Dow Corning Corp., Midland, Mich. ... Laura E. DeWald, '80 - Recent M.S. in Forest Resources, looking for employment or Ph.D. program. Spent first summer after graduation working for U.S.F.S. in Idaho ... Mark Meyer, '81 - Spending two years in the Peace Corps working on agro-forestry projects in the Philippines.
Feature

Forest Sciences Laboratory shop personnel adapting a felling and bunching head to the "Menzi-Muck." (Courtesy of U.S. Forest Service)
In the early 1960's the U.S. Forest Service created a National Forest Engineering Research Program to focus on problems related to harvesting, in-woods processing, and transportation of underutilized and problem forest resources. The result was the establishment of five regional forest engineering laboratories. Besides the Houghton laboratory, other labs were located in Seattle, Washington; Bozeman, Montana; Auburn, Alabama; and Morgantown, West Virginia. Each laboratory was charged with conducting engineering research within its region of responsibility to promote better forest utilization and develop engineering systems, techniques, or equipment needed to make forestry operations more efficient and economical.

The Houghton project, begun in 1961, was housed in temporary University quarters until the summer of 1968, when it moved to the present facilities adjacent to the Forestry/IWR building. Besides laboratory and office space, machine shop and pilot test facilities are available. Our current staffing, including temporaries, ranges between 20 to 25 people depending on project activities.

The Houghton laboratory, in terms of forest engineering research, is responsible for the seven North Central States containing 71 million acres of commercial forest land. As the demand for wood for fiber and fuel continues its steady increase, the north central forests must supply ever increasing amounts. The growth rate of the forests in the north central area must increase to meet these new market demands. The available forest resources must be used to the wisest and fullest extent possible. To accomplish this, new technology must be developed.

Our current charter mandates that we conduct research in three broad problem areas:

Problem 1 - Current harvesting, processing, and transportation equipment and systems are technically, economically, or environmentally inadequate to recover small timber and residues for fiber and energy.

Problem 2 - Equipment and techniques for establishing, managing, and harvesting short rotation intensively cultured plantations are not economically effective.

Problem 3 - Available data and techniques for analyzing forestry operations are not adequate for optimizing the operations over the wide variety of conditions encountered in the north central area.

Within the above areas, a number of important specific research activities and accomplishments are worthy of brief discussion.

CROSSCUT SHEARING OF WOOD — From our early beginnings, we have been interested in the application of hydraulically actuated shear blades to cut wood. Basic engineering data on the force, power, and energy requirements plus blade design criteria were developed and disseminated to the logging equipment manufacturing industry. This work is cited as being among the leading authoritative work in the world. Shear blades are now commonly used on high speed feller/bunchers, delimiters, slashers, etc., to sever wood. Our research on crosscut shearing has been used to help design harvesting machines. More recently, our cutting research has centered on the performance of auger cutters. We are now exploring a variety of applications of auger cutters for harvesting trees and residues as well as a delimming tool.

CHIPPING — In our chipping research, we investigated the power requirements for different types of chippers. This published work was, in part, instrumental in the design of whole-tree chippers. Our research is now being directed toward develop-
ing new equipment concepts for reducing small diameter trees and logging residues into relatively large chunks of wood as compared to chips — particles ranging in size from that of a cigarette package to a medium sized pot or mixing bowl. Chunkwood appears well suited as an intermediate furnish for structural flakeboard and composite wood products or as wood fuel. We are cooperating with the Institute of Wood Research to evaluate chunkwood derived flakes as a furnish for composite wood products. Industry will evaluate chunkwood as an industrial fuel.

Our chunking research has resulted in two inventions. One is a compact spiral-head chunking machine coupled to the power take-off of an agricultural tractor. A similar machine is now being commercially manufactured by a Scandinavian firm that is now seeking U.S. licensing rights. Our second development, an involuted disc chunking machine, is now being tested (figure 1). A key advantage of producing chunks as opposed to chips is that it takes one-fourth to one-third the energy.

CHIP QUALITY IMPROVEMENT — In a special mission-oriented assignment, we implemented a research program to improve the quality of whole-tree and forest residual chips. Our research thrust was to develop techniques to obtain clean chips by removing bark, dirt, grit, foliage, knots, and twigs.

In a five-year program, we investigated numerous approaches to beneficiate dirty chips — mechanical, optical, liquid medium, and chemical. Through several key promising developments, including two public patents, our laboratory developed inter-

national acclaim, and we became known as the world leader in chip quality improvement research.

Our key development was a process combining a chip conditioning pre-steaming treatment followed by mechanical roll compression to remove bark by adhesion to the rolls. A subsequent mechanical attrition and screening made it possible to remove additional fragmented bark and grit. This development earned our project a USDA Superior Service Award from the U.S. Secretary of Agriculture. Two commercial sized pilot plants patterned after our system — one in Canada and the other in France — have been constructed.

Our second system, which complements the first, employs a vacuum airlift to obtain a five product sortment (figure 2) ahead of subsequent steaming/compression debarking. The combined system makes it possible to obtain various final product sortments from dirty chips — clean chips for pulp and fiber, a fuel product, and a commercial foliage fraction as an animal food supplement. The various sortments would go to their highest valued end use. Several forest related industries have incorporated similar experimental equipment into their corporate research facilities or into future plans for possible new product development. As clean fiber becomes less available, industry will become increasingly interested in chip quality improvement. Our research developments will play a key future role in chip cleaning technology. Such commercial development will revolutionize the way industry obtains clean fiber for pulping.

MECHANIZED THINNING — The U.S. grows more hardwoods than ever before. However, their use has been limited because of timber quality and availability problems. Our pole sized hardwood forests need thinning. There are too many small and low quality trees per acre. The results are overutilization of high quality preferred hardwoods and underutilization of small and low quality hardwoods. Labor intensive chain saw thinning of hardwoods is expensive, and the slash left to rot is a wasted resource and is publicly offensive.

As a solution, we have investigated the potential
for mechanicial thinning pole sized hardwoods. Our goal is to do the thinning in a silviculturally acceptable manner with a minimum of damage to the residual stand and to economically recover the thinnings for use as fiber or fuel. Through several case studies we have worked with various types of rubber tired or tracked feller/bunchers; high speed, rubber tired grapple skidders; and whole-tree chippers.

Mechanized thinning is a viable method to accomplish timberstand improvement and generate an immediate profit to the logger and land owner. Industry has begun to practice mechanized thinning; however, use has been constrained due to limited chip markets. One immediate market opportunity for chips from thinnings is as energy wood. Our case studies showed that between 40 to 75 green tons per acre can be recovered which is equivalent to 40 to 75 barrels of oil per acre. As oil costs escalate, thinning for energy wood becomes increasingly attractive. In our thinning research we cooperate with other Forest Service and Michigan Tech personnel to evaluate tree damage, soil compaction, and tree growth.

LOGGING SYSTEM PRODUCTIVITY — Over the past 15 years a large variety of logging machines have been commercially developed. Associated with this development, there is a complete lack of documentation on cost and productivity of individual machines and blends of machines into a total logging system. To provide the needed documentation we conduct work measurement studies to assess cost and productivity and assess general equipment applicability to Lake States logging (figure 3). The data becomes a base by which newly developed systems or equipment are compared. To complement this work, we develop time saving and cost effective techniques for conducting work measurement studies. Our publications on costing methods are now used by various universities, logging training centers, and consultants to train loggers and students on proper techniques.

We also use computer simulation to help analyze harvesting systems and equipment. In a few minutes of computer time we change harvesting or stand parameters and study their effect. The same manipulative changes in real life would be cost and time prohibitive.

RESIDUE HARVESTING — In typical Lake States’ selective hardwood sawlog operations, it is common practice to buck out and recover sawlogs. The tops and limbs from sawtimber trees are left behind as a logging residue. Tops and limbs represent 40 to 50 percent of the above-ground portion of the tree — typically amounting to 10 to 20 green tons per acre. The future will bring increasing pressures to recover this material for fiber or energy markets. Also, a discerning public is becoming less tolerant of wasteful and visually offensive logging practices.

One recovery approach which has and will continue to be evaluated is to skid the entire top separately or as a part of the whole tree. However, this approach may cause excessive damage to the residual trees. An alternate research approach is to compact the tops at the stump before skidding. We have devised and tested two prototype machines which sever the large limbs and align them with the butt of the top. In this manner, the physical size of the residue tops is reduced for grapple skidding.

Through current cooperation with the Tennessee Valley Authority, a third prototype topwood harvester is being developed for testing in the TVA region to harvest tops for residential firewood (figure 4). An auger cutter will be used to sever the limbs. The same machine will skid the material to roadside through the incorporation of an inverted grapple on the bunk of the machine.
SITE PREPARATION/STAND CONVERSION — The north central region has considerable acreages of potentially good forest sites presently being occupied by poor quality dense hardwoods or off-site species. To meet projected demands for softwood, these low valued stands must be converted to more desirable species. In cooperation with MTU forestry staff and industrial foresters, we are evaluating a number of land clearing machines such as slashers, shredders, roller choppers, and techniques to keep out unwanted growth. Planting machines are also included. Cost and productivity data are being gathered and disseminated to industry.

HARVESTING WOOD FOR ENERGY — We have been active in investigating opportunities to harvest noncommercial trees, thinnings, and logging residues for energy wood. In a national feasibility study done under contract to the National Science Foundation and Federal Energy Administration, we concluded that the best opportunity and greatest impact for energy self-sufficiency could be made within the pulp and paper industry. Thus, in a follow on Department of Energy study, we investigated more closely the opportunity for Upper Peninsula and northern Wisconsin pulp and paper mills to become energy self-sufficient from harvesting energy wood. This study, one of the most extensive site specific studies of its kind conducted in the U.S., clearly showed that the 18 million acres of commercial forestland in the site specific area had the capability of easily supplying the current 2.4 million tons annually required for sawtimber and pulpwood plus the additional 4.0 million tons needed each year for energy self-sufficiency. Under managed harvest guidelines, we concluded the area could potentially supply over ten times what is currently being harvested over the next ten years. Although energy self-sufficiency could theoretically be attainable in the study mills, a major obstacle is installed availability of on-site wood combustion equipment.

INTENSIVELY CULTURED PLANTATIONS — Our project scientists have also been working in cooperation with our sister laboratory in Rhinelander, Wisconsin, to evaluate the potential of growing and harvesting trees under short rotation intensive culture (SRIC) systems. Initial studies have shown that ten oven-dry tons per acre per year of production is achievable under intensively cultured conditions, a five- to ten-fold increase over conventional stands. The potential production on the approximate 6.5 million acres of possible sites in the Lake States could amount to 65 million oven-dry tons per year of biomass for fiber products or for energy. A conservation value of $20 per oven-dry ton would yield a gross addition to the economy of $1.3 billion. However, none of this is possible without the development of adequate planting, tending, and harvesting equipment for SRIC forests. To this end, we are developing new equipment concepts to perform the task (figure 5).
Institute of Wood Research
Develops Utility Poles

Researchers at Michigan Tech's Institute of Wood Research are finding new ways to use tree species nobody else wants. "What we're doing is taking underutilized species that are unsuitable for structural lumber because of size or quality, and using them to make commercial products," explains Dr. Roy D. Adams, senior research scientist at IWR.

"We use primarily aspen and balsam fir pulpwood down to a size of about two inches in diameter. This wood is broken down into highly engineered flakes that are blended with additives to provide dimensional stability and durability. The flakes are then bonded together by a synthetic adhesive, aligned into a mat and consolidated into 'composite wood material' (CWM) using heat and pressure. Chemicals added to the flakes along with the adhesives provide protection from weather, fungi, termites and other insects."

One of the most promising new products devised from CWM by IWR researchers is the COMPOLE, a composite wood utility pole.

"An important aspect of the concept of fabricated poles is the fact that design is no longer fixed by nature," says Adams. "The engineered characteristics of the COMPOLE permit a flexibility that allows us to optimize the design process. As a result, we've been able to make an octagonal-shaped hollow pole that is lighter in weight, but stronger and less costly to produce than conventional solid poles of comparable dimensions."

The IWR is currently producing COMPOLES in 40-foot lengths for use at utility poles, but the Institute could produce poles up to 85 feet in length. Adams believes this potential makes the COMPOLE a very marketable product. "It's hard to get solid poles this size, and when you do find some, they're costly," he says. "For instance, an 80-foot solid pole for transmission lines costs about $1,000. There is also a lot of competition to use larger trees for other purposes, such as veneer logs and saw logs. The trees we use are too small to be used for solid poles or construction purposes."

"We feel a COMPOLE producing plant could compete very well with solid pole production in this part of the country," says Adams. "The cost of a solid pole goes up exponentially whereas the cost of the COMPOLE increases linearly because of the lower amount and quality of material in the latter. Also, since COMPOLES weigh only about half as much as solid poles of the same size, transportation costs would be considerably less. And where there is great variability in the strength and weight of solid poles depending on the tree species used, COMPOLE characteristics in both areas would be much more consistent."

Adams believes a large COMPOLE producing plant could produce the equivalent of about 200,000 40-foot poles annually. Several COMPOLE prototypes have been placed at locations in Michigan and Texas and so far have proven their reliability. The IWR is presently producing a number of COMPOLE light standards for the City of Houghton.

The IWR has also developed eight-foot long composite wood crossarms (COMARMS) to support conductors on utility poles and is in the process of developing and testing composite wood railroad crossties.

Funding for the work on COMPOLES has come from the Electric Power Research Institute of Palo Alto, Calif., while a Canadian firm, Domtar, Inc., is funding the research on crossties.

"What we need now is factories whose owners are willing to manufacture these products," says Adams. "It would be nice if we could have a pilot project right here in the Upper Peninsula that would produce these items and prove their functional reliability and their market potential."
Activities

Whole tree chipping of pole-sized hardwoods resulting from a mechanized thinning operation. (Courtesy of U.S. Forest Service)
The 1982 Winter Carnival, "Melodies in the Key of Ice," ended successfully for the Forestry Department. The individual student organizations joined forces and competed solely as the Forestry Department under the name "MTU Foresters." The results were a first place in the moustache and goatee competition; second place in the new beard contest; second place overall special events which included placing first in broomball out of a field of 63 teams, second in snowshoeing, and fourth in cross-country skiing; and third place in snow statue competition with the theme, "Slippity-Do-Dah." Those efforts were good enough for an overall third place finish in Class C. Congratulations to everyone who gave of their time and talents.

Third place Class C

First place moustache and goatee: Mike Zeller
Second place new beard: Tom Potter
Second place overall special events:
Second place snowshoeing: 40-yard relay - Bob Magon, Balazs Elody, Tom Potter; cross-country relay - Nick Bell, Tom Potter, Steve Nelson.
Fourth place cross-country skiing: Tom Potter, Nick Bell, Steve Nelson.
Steve Nelson glides toward the finish line (Photo by Brown).

Foresters Gary Skonieczny (left) and Mark Cramer (far right) exterminate the "Maggots." (Photo by Doyle)

"Forest Engineers" Bob Magon and Tom Potter. (Photo by Doyle)

Nick Bell strides against the wind. (Photo by Dumroese)

When the going gets tough, we slow down! (Dogs: Rod "Duck" Flancher, Kas Dumroese, Brian Dykstra (hidden), Russ Johnson, Bob Magon, Steve Nelson; Riders: Laura Snyder, Ann Strickler, Brian Warner; Musher: Tim Trombley; photo by Dexter)
Ros secures Widmair from random wildfires.
(Photograph by Dumroese)

Glenn asks of Gary, "Mmm, A^2x or B^2hir?" (Photograph by Trombley)

Who wears short shorts? (Photograph by Trombley)

Is this eggnog with or without? (Photograph by Trombley)
Bruce Ogonowski and Steve Szyszkoski find Bernie's blocks easier than spelling their names. (Photo by Dumroese)

Dave Fehringer and Steve Albee measure snow, of course (Photo by Dumroese).

Enough to drive anybody buggy! (Gail Simonds by Dumroese)

Typical twigs! (Jim Susorney, Janis Smiltneck, Susan Balconi by Dumroese)
'81 Summer Surveyors

Everyone hears them. The many rumors one hears about summer school make it seem like you’re ready for anything before it even starts: the work, long hours, and bugs that bite through oilskin. But then it’s your turn to face it. I knew they were all true the first day after the log I stepped on to cross a swamp sank, and I found myself in knee-high mud!

Yes, the summer surveyors of ’81 had their good times and bad. Take the case of Ken, Patty, and Al. They disposed of a transit quite nicely. Actually, it was only playing hide and seek on them, though they didn’t know it for a few nerve-wracking hours. The transit was safe, but I’m sure Patty didn’t feel that way when she went to pick it up and face the wrath of Ros! Who can forget all those long hours spent out at Donken, measuring angles and distances so precisely, only to find that when we put our data together we had the accuracy and precision of a donkey’s hind end? Fun times were had by the head chainmen as they went through the alder swamps or worse, trying to brush a straight line through it as the flies zoomed around their heads and bit through three layers of clothes. Remember our night out under the stars? Polaris sure did her share of messing us up, too.

The fun parts of summer camp? There were some, few and far between. For the ones that hadn’t done much field work before came the satisfaction of putting our book learning to practical use and picking up tips from the “old hands” and instructors. The warm, sunny days out on the topo site were great. We worked in the wildflowers, munched on blueberries, raspberries, and june berries, were visited by a doe and her two fawns, and wondered if we were ever going to see Kim again as she passed a bear on Oldfield Road. There were also good times working with our instructors; Chuck, Ros, Gerry, I.D., and Larry and Bruce, our T.A.’s. Many jokes were shared, and in the process everyone got to know each other better and a lot of friendships were made.

All in all, being a summer surveyor of ’81 was a great experience and one that will linger in my mind for a long time to come.

— Heidi Pfosch
'81 Summer Foresters

6:30 — Wake-up! Dress in grubs and pack chow.
7:00 — Stumble off to school.
7:30 — Irv's intro of the day... a promise of things to come.
9:00 — "Fungus of the Day" brought to you by Johann Bruhn.
9:30 — "Break-time!"
10:00 — Work begins! Journey off to the wilderness and encounter the first of many hordes of black flies, mosquitoes and other assorted wood-beasts. Don't forget your bug dope!

A typical day has you, your partner and the bugs wandering through the woods, usually lost, each weighed down by 20 pounds of useless equipment, trying to find the next point. Through swamps, rivers, lakes, spiderwebs in the teeth; over hill, dale and mountain, anything was possible. Of course, no day was complete without tripping over a multitude of stumps, logs, and rocks.

After reaching your destination (point #1), the never ending chore of scaling, grading, and identifying trees begins. All this is done by eye, of course. Those instruments are useless, remember? It's tree after tree, until no tree is left untouched in your plot. Then it's on to the next point, and the next, and the next...

As 4:00 p.m. draws near and your energy is dwindling, you search in vain for that awesome MTU bus that will take you home, where you can try to make sense of all the data you've recorded (Data, you say? I was supposed to record it? Oh, no!).

4:30 — Home — DINNER!
5:30 — The calculators hum.
7:30 — It's Miller time!
9:00 — Z Z Z z z...

A word to those who have yet to live through camp: every single horror story you've heard about it is absolutely true! Have fun!

— Alice Therrien and Laurie Winquist
But, Bev, I am serious! (Nick Bell and Bev Cornwall by Trombley)

Bob Gilreath and Bob Magon man the projector (Photo by Dumroese).

A jungle abounds in the U.P. (Sharon LaForest by Therrien)

Tom Potter puts the finishing touches on a new lobby display. (Photo by Dumroese)
A new species of wildlife: Bigorous suckerous. (Jamie Poliskey by Trombley)

C'mon, Ann; it's obviously an elm! (Photo by Dumroese)

Steve Nelson shows off the 32 volumes of the Forester at "Tech Is" (Photo by Crowther).

I've only got 253 more to copy. (Photo by Kober)
MTU Student Chapter of the Wildlife Society

First row, left to right: Tim Trombley, Tammy Sanders; Second row: Balazes Elody, Mark Cramer, Eric Beckert, Nick Bell; Third row: Mark Dosmann, Tom Potter, Doug Shouwn, John Forde, Tom Schreiner (Photo by Trombley).

The MTU Wildlife Society's fall calendar culminated in the second annual "Run for Wildlife." Over 100 runners participated in the event, aimed at raising proceeds for moose reintroduction research in the Upper Peninsula and for further Society activities.

In early spring the club traveled to Lake of the Ozarks, Missouri, for the 1982 North Central Student Wildlife Conclave where club members partook in both the quiz bowl and art contest. The team of Tom Potter, Mark Cramer, Rob Lindsay, and Mark Dosmann made an impressive showing at answering difficult questions related to wildlife and other natural resources. Dan Malueg received an unexpected second place in the art competition with his black and white drawing of a squirrel peeking out from within a tree snag.

As is tradition, the last major society function was the wild game smorgasbord in mid-April. This year's feast featured Chinese dishes of moose, venison, hare and Gulf Coast delicacies such as shrimp and crayfish. Our resident chef, Dr. Norman Sloan, was assisted by the expertise of Dr. and Mrs. Bernard Sun and several energetic volunteers, all of which helped to make this year's dinner a tremendous success.

Nick Bell
Officer
Members work on the cabin (Photo by Trombley).

Give that man a Blue Ribbon (Photo by Trombley).

We've got the answer! (Mark Cramer, Mark Dosmann, Tom Potter, Bob Lindsay by Trombley).

Delicacies disappearing at the Smorg (Photo by Dumroese).
Again this year, the Chapter began the fall quarter by addressing the problem of securing professional employment for our forestry graduates. Representatives from the MTU Placement Office and the new Biology Department computerized employment search program described the services available to students seeking employment, and also offered advice on resume and application preparation. Later in the year, new Forestry Department Head Dr. Lindo Bartelli addressed the Chapter, and related his professional experiences, offered encouragement to graduating seniors, and pledged departmental support for future student activities.

Guest speakers sponsored by the Chapter during the year included representatives from the U.S. Forest Service, the National Park Service, a consulting forester and real estate broker, and faculty member Dr. John Kotar. A major letter-writing campaign was also undertaken by the Chapter in inviting Secretary of the Interior James Watt to speak on the Tech campus. Although Secretary Watt eventually declined the invitation, the experience gained by members in contacting public officials will be a valuable asset in future efforts to bring a nationally prominent speaker to the Michigan Tech campus.

Members also attended several Upper Peninsula Chapter meetings during the year, and plan to have a strong representation from the Chapter present at the '82 National Convention.

Paul Essinger
Program Coordinator
God is creator of the universe. Its dimensions of time and space are not something God made once and then left alone. God is, rather, continually creating, calling into being each moment of each day.

Photos by Tim Trombley.
Xi Sigma Pi, a forestry honor fraternity, recognizes the academic achievements of forestry students. An objective of Xi Sigma Pi is to promote a fraternal spirit among foresters. Each year our national office awards a $500 scholarship to five members.

This year, the Alpha Eta chapter's activities included serving coffee and doughnuts and organizing a student activities calendar. Our most important achievement was sponsoring a forestry symposium. This year's topic, suggested by Dr. Crowther, was "The Forest Resource — Key to Diversifying Michigan's Economy." The symposium brought together public and private forestry leaders for a day of discussion on Michigan's economic difficulties.

— Brian Warner
Forester

Fall Initiates Cindy Richardson, Annette Kikendall, and Theresa Sysol (Photo by Crowther).

Spring Initiates Jonathan Field, Kevin McCarthy, and Paul Essinger (Photo by Crowther).

Front row, left to right: Kevin LaBumbard, Brian Warner, Steve Nelson, Dave Kober. Back row: Dan Miller, Johann Bruhn, Bob Hoffman, Annette Kikendall, Ken Phillips, Mindy Kerry, Russ Johnson, Richard Crowther, Bob Cain, Brian Dykstra, Mark Dosmann, Bruce Bugbee. (Photo by Kober)
Each year, the Alpha Eta chapter of the Xi Sigma Pi national forestry honor fraternity sponsors a symposium designed to generate communication of timely forestry related issues. This year’s symposium, held on April 27, 1982, dealt with the topic, “The Forest Resource: Key to Diversifying Michigan’s Economy.” This topic was chosen because of Michigan’s current economic dependency on the auto industry. This dependency, coupled with the current decline in auto sales, has resulted in the loss of many skilled workers and the loss of tax base. This lost tax base results in a decline in state revenues, which adversely affects many state services.

Seven different speakers took part in the days activities which saw a turnout of over 100 people. After the registration period, Dr. Dale Stein, president of Michigan Tech, welcomed everyone and explained the role of MTU forestry in the transfer of forestry technology. Then, Dr. John Hanieski, director of research in the office of economic development and chief economist of the Michigan Department of Commerce, spoke on strategies for economic recovery and development in the state of Michigan.

Gerald Gould, vice president for fiber resources of Mead Publishing Papers Division, spoke next on the business aspects of Upper Peninsula forestry.

During the luncheon that followed, Dr. Lindo Bartelli, head of the MTU Forestry Department, provided comments on forest management needs in helping to alleviate the predicted future worldwide wood shortage. After lunch, Dr. Henry Webster, chief of the forest management division of the Michigan D.N.R., spoke on what Michigan’s forest lands have to offer Michigan’s economy. Following this, Mr. Oswald Ziedler, president of the Michigan Forestry Association, remarked on the integration of the ownership base to bring the private non-industrial landowner into the picture.

The last scheduled speaker, Senator Ed Pierce, was unable to attend due to urgent business in Lansing. Substituting for Senator Pierce was a close associate from Ann Arbor.

By helping government, industry, private landowners, and academia communicate their problems and possible solutions, Xi Sigma Pi hopes progress will be made toward the improvement of Michigan’s economy.
'81-'82 Dean’s List

The following students of the School of Forestry and Wood Products earned 3.50 to 4.00 grade point averages for the 1981-82 school year.

*Achieved a 4.00 grade point average.

**Fall Quarter**


Freshmen Technicians: Mark A. Brouse.


**Winter Quarter**

Freshmen: Jeffrey S. Birdsley, Scott A. Gabriel*, Camille M. Gietek, David A. McMullen*, John P. Miller*, Debbie D. Patterson, Nancy A. Pinkelman.

Sophomores: Cindy S. Litwin, Karen A. Nuytten, Margaret L. Pax, Christopher D. Wiita, David W. Wait*, John C. Zweir.


**Freshmen Technicians**: Mark A. Brouse.


**Spring Quarter**

Freshmen: Kevin M. Cunningham, Keith S. Eldred, Jr., Camille M. Gietek, Roy E. Lefevre, John P. Miller*.

Sophomores: Jeffrey S. Birdsley, Rick M. Blom, Andrew T. Mulcahey.


Freshmen Technicians: Mark A. Brouse.


The Forester extends its congratulations to these students for their outstanding academic achievements.
Kurt Stoughton patiently screws up. (Photo by Dumroese)

More number crunching. (Ann Strickler by Trombley)

Greg Besse carefully works (Photo by Trombley).

Alice Therrien and Kathy Teahan try to study (Photo by Trombley).

But they all look the same! (Doug Gullekson by Dumroese)

Tech Forester
Freshman — That is a tree.
Sophomore — That is a maple tree.
Junior — That is a sugar maple tree.
Senior — Cut th' damn thing down.
From the '50 Forester
MTU Student Chapter
Soil Conservation Society of America

The MTU Soils Club is involved in promoting the development and advancement of the conservation of natural resources including soil and water.

The Club provides its members educational programs in the form of lectures and outings. At monthly meetings, speakers relate their experiences dealing with soils and forestry in other areas of the world. Past presentations have described the soils and related forestry practices in Borneo, New Zealand, and Russia.

Each spring and fall, the Soils Club participates in regional and state soil judging meets. At these meets, we compete with Big Ten colleges in describing and classifying soils as they appear in their natural settings. These meets enable the members to view soils found in other parts of the Midwest and meet students from other universities.

The Soils Club is also engaged in social activities which include intramural sports and Winter Carnival activities.

— Glen Summers
President

Front row, left to right: Kevin Cappo, Mary Malla, Janis Meldrum, Bill Perks; Second row: Glen Summers, Russ Wendell, Ron McCormick, Donna Hinz, Betty Perks; Back row: Lou Blume and Brian Getzelman (Photo by Weilnau).
Soil Judging Team's Fall Trip

by Kevin A. Cappo

It was a typical autumn day in the Copper Country when the MTU soil judging team departed for the deep south (Baraboo, Wisconsin) and a weekend of fun and excitement. The soft howl of a raging blizzard and limited visibility was of no concern to the eleven of us as we departed that Thursday afternoon. After all, we had Dave (Dad) White as our driver, Mary (Mom) Dereske as our navigator, and our trusty MTU vehicle to transport us.

The first hint that all was not well was noticed by several people simultaneously. When the alternator had finished giving its all, the headlights went noticeably dim. It was the middle of nowhere, in the middle of night, and our van was slowly dying.

Pushing on regardless, the van was on its last legs when we were rescued by a state trooper. Driving with practically no lights and flames coming out of the exhaust, it was small wonder when the officer told us we had car trouble. Guided to a mechanic’s place, we discovered we were unable to get the van repaired. We were forced to stay in the sprawling metropolis of Watersmeet for the night.

Come morning, and a fresh battery, we headed south for repairs in Eagle River, Wisconsin. After repairs we flew low toward our destination, an old 4-H camp. This year’s meet was put on by the University of Wisconsin, Madison, and sponsored by the American Society of Agronomy. We just made it to the camp for two of the three practice pits.

In a practice pit, 50 or so people, all armed with knives, have about an hour to crawl down into a 3’ x 8’ x 5’ (w x l x d) hole and try to find something. With your fingers turning blue and going numb from the cold, you do not find much. What you found, the judges didn’t find.

That night was spent in accommodations which make the pits of Wads look like paradise. Heat was provided by a wood stove with a hernia. What passed for bunks were lumpy and built for the less tall.

In keeping with tradition, the evening before a meet is spent enjoying the company of the other teams at the local cultural center. Fluids were provided by the Madison team. Also in keeping with tradition was the Platteville team (national champs), who stayed home and studied.

At 8 o’clock, after breakfast, we were on our way out to the field of battle. The time had come when our expertise and dedication would be tested. Teams were split up so you couldn’t converse with your allies. The 14 to 16 people at each pit were divided into two groups, group A and group B. While one group was in the pit, the other performed field tasks, such as finding slope and evaluating the landscape for signs of development, erosion, and site location. The 40 minutes allowed at each pit were broken into five eight-minute periods. This allows two sets of one group in and one group out, plus an eight minute free-for-all at the end. The number of horizons to be described in each pit is given, as is the location of the third horizon. Texture, color, consistency, structure, and numerous other measurements must be performed in each pit. Two pages of information must be filled out while somehow managing a color book, water bottle, soil tray tins, knife, and clipboard. This is difficult to do in 40 minutes in the best of conditions, let alone in steadily falling temperatures.

Texturing is best done by touch, but as fingers and soils freeze, the taste method is employed. Too late we discovered the field was often used as a cow pasture! When the judging was completed, we headed back to the 4-H camp for the “official” results.

As usual, the judges and laboratory analysis were way off base in their findings, but so was Platteville, as they took top honors. Tech’s A team came in seventh out of 13 teams and the B team was close behind. Only a few points out of over 1800 per team separated us from the fifth place trophy.

We left in high spirits. MTU, an engineering school, had completely beaten two agricultural schools and had stood our own against several others. This performance was completed on heavy, rich, residual agricultural soils, while our practices were performed on light, poor glacial debris.

Of our ten soil judges, Ron McCormick, Mary West, and Russ Wendell had never judged before. Kevin Cappo, Glen Summers, Mary Dereske, Mary Malta, Jan Meldrum, and Dave White had only judged once before, and Louis Blume and Brian Getzelman had judged twice.

Anyone can join the Soils Club and participate in a meet. Many judges have had no soils classes when they perform in their first meet. At this meet, a good time was had by all. The trip was fun, exciting, and a learning experience. It also gets you away from Tech for a weekend to forget school and studying, while you enjoy yourself and meet new friends.
The Michigan Tech chapter of FPRS was chartered in 1977. Since that time, the chapter has had a continual increase in its membership, student interest, and participation in campus activities. The chapter members have the goal to make FPRS one of the most active professional organizations on campus. Each year the chapter holds an annual Lake Superior beach picnic for members, faculty, friends and families. The chapter participates in campus activities such as Winter Carnival and Homecoming events. Speakers from industry and research are always sought after. Once every two years, the chapter participates in a campus-wide technological exhibition. Last year’s theme was “Wood Tech Is” and demonstrated the aspects of the wood fiber program here at MTU. The chapter has supported itself by cutting pulp, planting trees, and sponsoring campus movies.

This year, the chapter increased contact with industry, research organizations, and other FPRS chapters. The chapter increased the number of speakers, and welcomes any visitors to Michigan Tech who may wish to address the group. Plans are being made to organize sport competition events with other campus organizations, develop a fund to send student representatives to the national meetings, and to start a placement program for student summer jobs within the industry. Overall, the Michigan Tech chapter of FPRS is becoming an active and involved organization here at MTU. This year was a very successful one for the organization.

— Dan Miller
Advisor
Seated: Melissa Boos, Membership Chairman; Matt Imbrock, Secretary-Treasurer; Standing: Bill "Whitey" Lange, President; Liz VanMeerbeeck, FPRS Student Bulletin Editor; Howie Scheidt, Vice President; Dan Miller, Advisor (Photo by Wellnau).

Kevin Maguire mans the raffle booth (Photo by Dumroese).

Research Scientist Alan Preston addresses members (Photo by Dumroese).

Debbie and Harry Leadbetter, Bernie, and Harold Scheidt socialize. (Photo by Dumroese)
With the intention to pursue a productive year, the Douglas Houghton Student Chapter of the American Congress on Surveying and Mapping established several goals at the beginning of the school year. Among these goals were the improvement of graduate placement through the university, the provision of a major service to the campus and community, and the expansion of the presentations at Chapter meetings.

A program to improve graduate placement conditions proved to be a very involved but worthwhile activity. Letters describing the surveying program along with questionnaires were sent to hundreds of firms across the United States. Returned questionnaires revealed a tremendous interest in Tech's surveying program and students and a desire to establish a program to employ students during the summer as well as on a full-time basis.

A new service provided by the Chapter this year was an instrument display attended by several surveying instrument dealers. Organized similar to a convention exhibit, the display allowed students, faculty, and area surveyors to examine and compare surveying instruments ranging from EDMs to theodolites.

The continuing desire to remain up to date with ever-changing topics in the field of surveying lead the Chapter to invite speakers from various specialty fields to give presentations. Many of the speakers presenting topics ranging from condominiums to decayed wood identification were employers of Chapter members during the previous summer.

Along with these major projects, the Chapter produced its yearly resume booklet, formed an outstanding volleyball team which soundly defeated the Forestry Club team, and maintained an exhibit booth at the Michigan Society of Registered Land Surveyors convention in February.

Through activities such as these, more involvement from students was obtained to assist in achieving a most successful year of existence for the Douglass Houghton Student Chapter of the American Congress on Surveying and Mapping. The Chapter hopes to continually expand its ideals and activities with each new year.

— Rena Lautzenheiser
Chairman

Left to right, sitting: Kim Wessell, Heidi Plosch, Patti Lancendorfer; kneeling: Bruce Cecka, Tom Bogren, Rena Lautzenheiser, Bruce Ogonowski, Anna Jawarsky, Ronald Jacobson; standing: Bob Shepherd, Dave Bradley, Ken Wieciech, Al Laurette, Prof. Charles Hein, Dave St. Amaud, Dick Hupfer, Joe Curtis, Gary Marciniac, Mike Bartolo, Dr. Roswell Miller, I. D. Widjajaratne, Tim Purdy.
Rena lacks only "contact"... as her teammates cheer on (Photos by Dumroese).

Annamarie Jaworsky, Bruce Ogonski, and Heidi Pfosch listen to an equipment dealer (Photo by Dumroese).

Rena sets up the victory for the Surveyors (Photo by Flancher).

Officers: Dave St. Arnaud, Treasurer; Bob Shepherd, Board Member; Rena Lautzenheiser, Chairman; Kim Wessell, Secretary; Annamarie Jaworski, Board Member; Bruce Cecka, Board Member. Missing: Ron Jacobson and Joe Curtis, Board Members.
This year, the Otter River Camp again provided shelter for many weekend visitors from the Tech campus. Forestry students, in need of a break from the rigors of studying, used the cabin to relax or as headquarters for a variety of recreational activities. Whatever the reasons were, everyone was drawn to the camp by one common factor, the beautiful serenity of the area.

Besides the regular weekend visitor, this year saw a variety of activities occur at the camp. First, there was the beautiful autumn camp day, with all the trees showing off. Repairs were made on the cabin and the cable bridge, the woodshed was restocked, and the property cleaned up. Everyone worked real hard, especially since leftovers from last year’s Booyaw was being served for lunch!

Later on in the year, with the snow piling up on the roof of the cabin and no end in sight, a group ventured to the camp to shovel off the snow. One could almost hear the relief of the cabin timbers as they were relieved of their burden of thick, heavy snow. Of course, after winter comes spring, and with the sudden increase in temperatures, the Otter River overflowed its banks and the cabin got partially flooded. With the work of some diehard students, the cabin was cleaned up after the flood and things are again back to normal.

There were many challenges facing the students this year in maintaining the Otter River Camp as a great place to get away from campus life. These challenges were successfully met so that the Otter River Camp still stands its ground as a place to get away and enjoy the beautiful Copper Country.
Now where was our point again? (Annamarie Jaworski and Tom Bogren by Hein)

Mindy Kerry and Sue Schack down in the pits (Photo by Dumroese).

Nick Bell finally gets his portrait, with a little help from Dave Sampson. (Photo by Trombley)

Drawing by Laura Snyder.
The purpose of the Forestry Club is to represent, in group effort, the forestry students in campus activities. The club meetings are not only held to inform, discuss, and coordinate club functions, but also as a means for members to meet and socialize with each other and professional foresters.

The Forestry Club’s ‘81-’82 school year was quite successful, thanks to the support of the officers and club members. Club activities for the year started out with an old time crosscut sawing demonstration and competition at the Copper Harbor Oktoberfest. A successful camp day was coordinated by the club’s Otter River Camp Committee of Bryon Wren and Laura Snyder. This day encompassed a little cleaning, a few minor repairs on and around the cabin, and lots of fun. A hardy lunch and refreshments were provided.

Several club members participated in the 30th Midwestern Foresters’ Conclave. The meet was held at the University of Michigan’s Fresh Air Camp, just a few miles north of Ann Arbor. The team went to the conclave with a good competitive spirit, but the meet did not prove too victorious for the MTU team.

Hopefully, the experience gained by the underclass team members will prove triumphant for future teams.

The meetings had good membership turnouts. This helped the club function smoothly this year. Besides discussing club business, the members enjoyed being entertained by guest speakers at several of the meetings. Talks were given on the Porcupine Mountains Wilderness State Park, mule logging, U.S. Forest Research Stations, and consulting forestry work.

Another successful year for the MTU Forestry Club has come to an end. The officers and members have felt the joy that comes from accomplishing a goal together, from making a new friend, and from winning an event. A lot of effort by the participants went into making this year a success, for which I say thank you and best of luck to all.

— Robert Magon
Chief Forester
Officers: Dr. Ros Miller, Advisor; Alice Therrien, Treasurer; Steve Nelson, Assistant Chief Forester; Theresa Sysol, Secretary; Bob Magon, Chief Forester (Photo by Dumroese).

Forester Dumroese (r) succeeds against two surveyors (Photo by Flancher).

Lewis McGrath with mule logging equipment (Photo by Therrien).

Carol attempts the impossible at the bowling party (Photo by Dumroese).

Feasting at the Booyaw (Photo by Crowther).
1981 Midwest Forestry Conclave

The 1981 Conclave was a trying and learning experience for the Forestry Club this year. Eight members of the club participated in the annual event which was held at the University of Michigan's Fresh Air Camp, which is located in Hell, Mich. Participants for the club included: Ellen Weilnau, Cindy Litwin, Lionel Lauren, Steve Nelson, Edward Doyle, Dave Vyain, Bob Magon, and Kurt Voelkner along with the club's advisor, Professor Roswell Miller.

The Forestry Club's team received the bearskin this year, with their only point coming from a fourth place by Kurt Voelkner in the tobacco spitting contest. With experience from this year, the club has high expectations for next year, with intentions to "give" the rug away. Next year the conclave will be held in Ames, Iowa.

— Edward Doyle

Kneeling: Steve Nelson, Lionel Lauren; Standing: Dave Vyain, Kurt Voelkner, Ellen Weilnau, Ed Doyle, Cindy Litwin, Bob "Foreman" Magon.

Ed Doyle's special event. (Photo by Weilnau)

Can't Kurt cut that cant? (Photo by Weilnau)

Exhibits perfect form. (Kurt Voelkner by Weilnau)

"Bear-skin" form. (Kurt Voelkner and Bob Magon by Weilnau)
"The love of the wilderness is more than a hunger for what is always beyond reach; it is also an expression of loyalty to the earth (the earth which bore us and sustains us), the only home we shall ever know, the only paradise we ever need — if only we had the eyes to see."

—Edward Abbey

Photos by Tim Trombley.
The staff put in many long hours of dedicated work this year. It was fantastic having them come up to me and request something to do! However, we took one break from our endeavors for a Christmas party at the Crowther’s. I can proudly self-proclaim myself as the “Uno Champ” (or “chump” as everyone else thought). The evening culminated in a rousing carol sing-a-long with the talented John Miller tickling the ivories. This year we also displayed our extra photographs (much to the horror of some individuals), and accepted donations for them. It was a very successful idea and one we will probably continue. Once again, I would like to thank my staff for their work, which made this Forester what it is.

—Kas
Steve, Kas, Ron, John, Ellen, Alice, and Ed prepare the '81 Forester for mailing (Photo by Crowther).
Advertisers

Forest engineering personnel conducting a time study of a rubber-tired whole tree feller-buncher. (Courtesy of U.S. Forest Service)
Woody Guthrie's song celebrated the glories of the land and told about how it was "made for you and me." He knew the land better than most of us because he walked it from one end to the other, looking for work when poor land management turned his home in the Southwest into a wasteland called the Dust Bowl.

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Steven Nelson and Kevin LaBumbard man the doughnut table.

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Please return to Forester, Forestry Dept., M.T.U., Houghton, MI 49931

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The Summer Surveyors Lament

An epic poem that can be sung to the tune "Oh, Susanna," inspired by the LS252 class of '81, and composed by the Dr. Roswell K. Miller.

1. Oh, I thought I'd go to M.T.U. to learn to Land Survey,
   And now that Summer Camp is through, I've learned to rue that day.
   Chorus: A Surveyer, I think I'll ne'er be,
   For to learn to chain is a great big pain,
   And a Frant is Greek to me.

2. Oh, the first five weeks of two-five-one, included a sun shot.
   Five weeks later we found out, we sure had learned a lot.

3. Transits, tapes and "bobs" and Rods, calculate and plot;
   Work-filled days and sleep-less nights; Surveyors we're still not.

4. Two-fifty-one was lots of fun, field projects all came due;
   But what we had was not as bad as in two-fifty-two.

5. Oh, I came to camp like a survey champ, with a great big machete.
   But the brush did hide a swamp too wide, and I stuck it in my knee.

6. Oh, a compass knows the way it goes, it's North Magnetic.
   But my line tends to get the bends, around each big old tree.

7. Oh, the hills are steep, the brush so thick, it's hard for me to see.
   In down-pour rain it's hard to chain, horizonally.

8. Oh, we chained the line, turned angles fine, the corner for to see.
   We plumbed the line but missed by ninety feet that old B.T.

9. Oh, the bugs they crawled upon my skin and bled my scalp all day.
   I smoked a lot, swatted and trot, to keep the bugs away.

10. Oh calc-u-late and com-pu-tate and run out every check.
    This clo-sure must mean there's a bust, and we say "what the heck."

11. Clo-sure should be near one in five thousand feet or more.
    But my traverse was always worse, something like one in four.

12. Oh, Pol-aris is a pretty star, to sight on land or sea.
    They dis-ap-peared, the cross-hairs did — that star eluded me.

13. Oh, to drop the trans-sit is a sin of the high-est de-gree.
    And so we thought, before we're caught, we'd sign up for C.E.

14. Ver-ti-cal curves got on our nerves laying out old field road.
    It was too bad, 'twas real-ly sad, my plumb-bob stabbed a toad.

15. Oh, bat-ter boards are use-ful boards to do two dif-ferent things,
    With grades on height, and nails just right, to guide the men with strings.

16. Oh, I think that I shall never see, such a glor-i-ous thing.
    As forty knots tied in a row on Ros's plumb bob string.

17. Oh, dou-ble twice and chain it thrice, the base-line for to set.
    Tri-ang-u-late without mis-take, the dis-tance for to get.

18. Oh, sight B.M., figure H.I., is all one had to do,
    To chase a con-four 'round the swamp, or up a hill or two.

19. When work is done we'll have some fun, or so we thought at first.
    A glass or two was not enough to even slake our thirst.

20. E.D.M.'s, The-od-o-lites, Survey Adjustments too,
    Sub-di-visions, le-gal as-pects, wait for me and you.

21. Hy-dro-graphic, map pro-jec-tions, con-struct-ion lay-out.
    My cal-i-cal-bor blinked at me — the bat-ter-ies ran out.

22. Some day I hope to grad-u-ate with my L.S. degree.
    To look back on, ten weeks of fun, that was im-posed on me.

23. They say one learns from one's mis-takes, and if that's so I'll be,
    One of the smar-est grad-u-ates, with an L.S. degree.