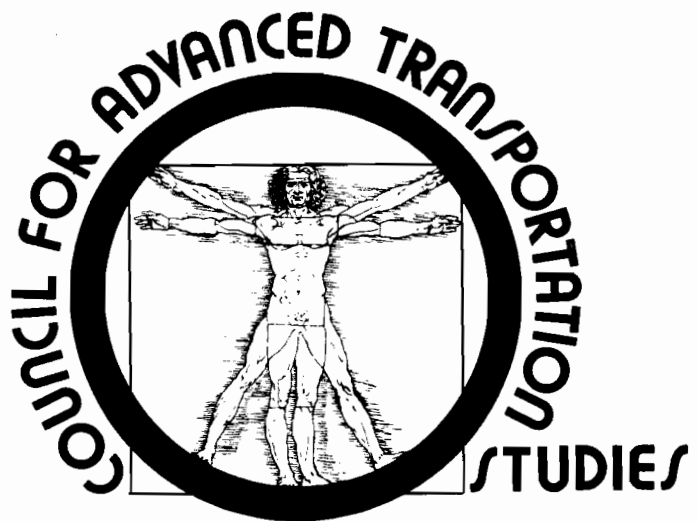


SELF - STUDY REPORT

COUNCIL FOR ADVANCED TRANSPORTATION STUDIES

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The University of Texas at Austin

SELF-STUDY REPORT
COUNCIL FOR ADVANCED TRANSPORTATION STUDIES

May 31, 1976

COUNCIL FOR ADVANCED TRANSPORTATION STUDIES

ORGANIZED RESEARCH UNITS - SELF-STUDY

31 May 1976

OBJECTIVES AND GOAL SETTING

The Council for Advanced Transportation Studies is a multidisciplinary organization formed to carry out research and educational programs in transportation. The programs focus on national, state, and local transportation problems and provide an academic background for the development of professional careers in several fields of transportation. The Council provides a forum for faculty and student participation through close working relationships with industry and government agencies having common goals and interests in transportation education and research.

The overall objectives and functions of the Council are of a continuing nature and, therefore, will not be completed until such time as there are no transportation problems or interest in transportation. The objectives, or functions, can be divided into two categories of importance.

Primary Functions

1. Academic - To coordinate the development of multidisciplinary approaches to the teaching of transportation and transportation-related courses at The University of Texas at Austin.

2. Research - To furnish a vehicle through which the expertise of the academic community, either as individuals or as multidisciplinary teams, can be brought to bear on transportation problems of local governments, the state, and the nation.

Secondary Functions

3. Information Services - To collect and disseminate information concerning current developments in the area of transportation.

4. Public Service Activity - To furnish the expertise of the Council participants to various public bodies charged with responsibilities concerning transportation.

ACTIVITY SUMMARY

History

The Council for Advanced Transportation Studies was created in August 1972 by the president as an administrative unit of The University of Texas at Austin for the purpose of bringing together faculty, staff, and students with an interest in transportation.

Subsequent to its creation, the Council developed the largest single multidisciplinary transportation research activity in the United States. This activity was funded through the University Research Program, U. S. Department of Transportation by means of a contract totaling more than one million dollars for a three-year period beginning in the Spring of 1973. The function of the research in this program was to encourage multidisciplinary teams of researchers to attack transportation problems on a broad front. As a result, 25 faculty from 12 disciplines in 10 schools and colleges became involved and led to the actual formation of multidisciplinary teams.

Other major contracts have been negotiated with the U. S. Department of Transportation, the U. S. Forest Service, International Bank for Reconstruction and Development, and the Texas Governor's Office of Traffic Safety. Smaller contracts have been established with the Office of Traffic Safety of the Illinois Department of Transportation and the Austin State School.

Current activities involve research, education, and public service as outlined in this report and in the "Report on Activities of the Council for Advanced Transportation Studies" dated 6 February 1976.

As a result, external contracts have grown from \$333,487 in 1973-74 to \$800,000 for 1975-76, and have involved approximately 80 faculty from 11 colleges or schools and 22 departments. Recently a new contract was signed for the Traffic Safety Program in the amount of \$557,000.

Significant Accomplishments

The Council for Advanced Transportation Studies has during the past three years, conducted the largest, single multidisciplinary Transportation Research Project funded by the Department of Transportation's Office of University Research. The function of the research outlined in this program was to encourage multidisciplinary teams of researchers to attack transportation

problems on a broad front. A team of 25 faculty members from 13 disciplines in 11 schools and colleges were involved in this particular project.

In addition, five new research efforts have been initiated this past year. One project is with the U. S. Forest Service to develop a system for the management and maintenance of forest service roads. Two of the new projects are funded by the University Research Program of the U. S. Department of Transportation. Another of the projects is a three and one-half year effort, funded through the World Bank, to assist Brazil in the development of its highway system. Finally, a program of research was initiated with the Texas Governor's Office of Traffic Safety on a wide spectrum of traffic safety-related problems. A significant portion of the research funded through the Council has utilized Texas locales and systems as case studies for investigating particular problems. While the problems are usually of national concern, the information and data derived from the studies are directly applicable to Texas. The report of 6 February 1976 contains annotated bibliographies of all research reports and research memoranda which have implications for Texas. Some of these results have already been utilized in the preparation of plans or other such endeavors, and some are the basis for suggesting future areas of investigation of Texas problems.

The Council has catalogued over 90 university graduate and undergraduate courses relating to transportation. The courses are described in a brochure entitled "Academic Programs in Transportation." In addition, the Council has sponsored two University-wide seminars, one undergraduate and one graduate, in transportation, which have regularly drawn large numbers of students from diverse backgrounds. In the past year 22 guest lecturers were brought to the campus to participate in these seminars.

The Council also sponsored two courses on Traffic Safety Management. These courses were specifically tailored to meet the needs of the State of Texas' district representatives of the Governor's Office on Traffic Safety. At the same time, the Council is currently in the process of identifying core courses for specific types of transportation-related educational programs. After completion of this task, materials will be prepared to assist undergraduate and graduate advisors, as well as students, in the process of developing appropriate educational programs which will help the students obtain their educational goals in transportation studies.

The Council attempts to identify sources of financial aid for students interested in transportation studies. While it has identified many such sources, the most outstanding of these has been the designation of the Council as the administrative body for the prestigious ENO Transportation Foundation Fellowship for graduate studies in Transportation. The Fellowship/Scholarship Committee of the Council, after screening several applicants, has awarded this \$7,000 fellowship to Mr. Thomas W. Horne, a graduate student in Civil Engineering. Closely related to financial aid for students has been the involvement of over 40 graduate and undergraduate students in research projects sponsored through the Council. In addition to the obvious direct training and skills in specific aspects of transportation, graduate theses, dissertations, and professional reports have resulted from this student involvement.

Approximately one-half of the graduate students whose thesis work was supported by research funded through the Council are employed in the state of Texas in transportation-related occupations. Several state agencies, such as the State Department of Highways and Public Transportation, are sending their employees back to The University of Texas at Austin for further training. These students are either directly involved in projects funded through the Council or are utilizing the resources of the Council in their studies and personal research.

Another important type of benefit provided by the Council is service to state and local officials and agencies, and to various community groups or individuals.

Current Activities

Research

A substantial effort during 1975-76 has been devoted to completing the research activities which were undertaken during the past three years as a part of the multidisciplinary research sponsored by the University Research Program. It is not anticipated that a large multidisciplinary research will be conducted through the Council next year since it appears that there has been a de-emphasis of these activities at the federal level. Thus, it will be necessary for members of the Council to initiate new research on an individual or small-team basis.

A major effort has also been devoted to the development of the Traffic Safety Management Program which involves educational programs, information

collection and dissemination activities, and research projects on traffic safety. Programs, services, and projects are directed toward local, state, national, and international traffic safety concerns. This is an on-going program, with activities during the first year of operation stressing planning and development of the operational capability to provide products and services in the three areas of education, information, and research. On April 30, 1976, an interagency contract for \$557,000 was signed which will provide funding for an additional 28 months.

The Council is also involved in a major research effort in Brazil to develop improved highway planning models for low volume roads in developing countries. The program involves the collection and analysis of empirical data on road design, road deterioration, maintenance costs, and road user consequences in Brazil.

Information services have been planned and initial development undertaken toward:

1. an information center with catalogued reports, studies, analyses, and publications,
2. systems designed and put into operation to evaluate the accuracy, validity, and applicability of documents and materials, and
3. initial dissemination procedures and vehicles.

The following report and memorandum have been published since the report of 6 February 1976:

RR 35 Burnett , Patricia, Perceived Environmental Utility Under Alternative Transportation Systems: A Framework for Analysis

RM 29 Ehrfurth, John Walter and David A. Sands, Current Status of Motor Vehicle Inspection: A Survey of Available Literature and Information

Education

The Council, through its Academic Committee, has continued to encourage educational programs which cross departmental, college, and school boundaries both at the undergraduate and graduate level. A number of major proposals for developing education programs have been developed. In at least one case, the Council elected not to propose on an education project since the proposal would require additional faculty which is a commitment that the Council could not make.

Educational programs included the development and operation of two six-week basic Traffic Safety Management courses, along with several short-term seminars and laboratories.

Public Service

The Council and its members have been actively involved in the Austin Tomorrow program, the Capital Area Planning Council planning efforts, the Texas Department of Community Affairs involvement with Community Action Agencies, the State Department of Highways and Public Transportation inventory of public transportation services, and many other programs. A conference on transportation and energy which provided input for the Hobby Commission deliberations was sponsored by the Council and Texas A&M University. Finally, the Council and its members provide informational and advisory services to a wide variety of individuals and state and local organizations such as the Texas Department of Community Affairs, Texas Industrial Commission, and several Councils of Government. These activities range from information on employment opportunities and/or potential employees to advice on detailed technical matters, such as appropriate analysis procedures for attitudinal surveys of potential public transportation users.

The Council is represented on the Governor's Interagency Transportation Council and participates in the state's A-95 review process for all state and federal transportation projects. Council members also play active roles in many national committees such as those of the Transportation Research Board of the National Academy of Science.

Comparison with Similar Units

The Council is a unique organization in Texas and in the United States. Although there are a number of units which claim to have multidisciplinary programs, CATS is the only unit to successfully conduct multidisciplinary research. This has resulted in a team of approximately 80 faculty representing diverse disciplines who can work as a team or as individuals to solve transportation problems through education and research. In addition, other units in Texas do not focus on the social and human factors or, if they do, there is not a blend of the social and physical sciences.

Research Facilities

The Council is an administrative unit and as such has limited facilities and equipment under its control except for office space and office equipment. Through its member faculty, the Council utilizes the laboratories and equipment of the University for its activities. The administrative and support staff are currently housed in ECJ Hall.

Approximately 80 faculty and staff from 22 department and 11 colleges or school are involved in the Council's activities. The actual faculty, their areas, and their involvement are detailed in the report submitted 6 February 1976.

The major strength of the unit is the faculty and staff which represent a wide range of disciplines and the dedication and enthusiasm of this group. This enthusiasm resulted in the substantial increase in external support which has occurred during the past year. The major weaknesses are the lack of direct control, which the Council can exert in terms of coordinating and promoting transportation activities in the University, and the lack of an adequate University budget.

The major capability which is not being fully realized relates to the ability of the Council to promote research at the national, state, and local level. While the Council has been extremely successful, the lack of funds for the support of staff and travel has weakened the Council's effort. Key staff and faculty are forced to spend significant portions of their time on day-to-day matters and in developing support for their own salaries. Likewise, there is inadequate travel money for trips to Washington, D. C., etc. which are mandatory for a successful program. To date the Council has compensated for the lack of funds by significant personal efforts and by bootlegging funds designated for research and education.

A major competition at the national, state, and local level is Texas A&M, which has a large budget which can be used to improve visibility.

It must also be restated that the University must recognize the efforts of faculty involved in multidisciplinary research such as the work performed by the Council. The Council or similar units cannot exist if their personnel are penalized by not being promoted or receiving adequate salary increases.

In short, the Council needs a budget and its personnel need recognition.

Organization

Administrative Organization

The original organization subdivided the Council into a Division of Research and an Academic Division with each headed by a Director. Subsequently, the divisions have been abolished and the Council is headed by a single Director aided by a group of Assistant Directors. The Director reports directly to the Vice President for Research. The current administrative structure is the same as reported in the report of 6 February 1976, which is as follows:

Dr. Thomas W. Kennedy - Director

Dr. John F. Betak - Assistant Director for Research Coordination

Dr. Grover C. Cunningham - Assistant Director for Administration

Dr. David A. Sands - Assistant Director for the Traffic Safety Program

Update of Personnel

No significant changes have occurred in staff and members since the report of 6 February 1976 except as summarized below:

Members: (see report of 6 February 1976 - Item 5, p 1)

add:

Reuben R. McDaniels, Jr. - Associate Professor, Management

D. Maitland Huffman - Associate Professor, Management

Walter Reed - Assistant Professor, Mechanical Engineering

Freddy L. Roberts - Visiting Associate Professor, Civil Engineering

Associate Members: (see report of 6 February 1976 - Item 6, p 3)

Professional Members: (see report of 6 February 1976 - Item 7, p 5)

Graduate Students: (see report of 6 February 1976 - Item 13, pp 9-12)

Number of Classified Positions:

	<u>Administrative Office</u>	<u>Total</u>
Clerical	7	12
Laboratory Technicians	0	54
Drafting/Computer Programmer	0	2

Working Relationships with Relevant Departments

An organization such as the Council is based on a close working relationship with all departments and colleges interested in transportation research and education. This interaction is primarily through the faculty and staff working with the Council. Nevertheless, the deans of the major colleges and schools are members of the Executive Committee which provides a flow of information and improves the coordination needed for a multidisciplinary program.

Time Spent by Faculty and Professional Members

This question is difficult to answer and is probably applicable to the Council, except for the administrative staff, since members of the Council are normally faculty and staff in other departments. In the case of the administrative staff, the magnitude of the effort is significantly in excess of the effort generally expected of most staff and faculty. Table 1 contains a summary of Council members and time spent expressed in terms of a percent of their time.

Teaching Activities of Non-Faculty Personnel

Most teaching activities have been conducted by faculty personnel. However, Dr. John Betak, Assistant Director, has lectured in the LBJ School, Psychology, Community and Regional Planning, Transportation, and Zoology. In addition, he has participated in the Council's course "Foundations for Traffic Safety Management."

Outside Support

The nature and amount of outside support is summarized in the report of 6 February 1976. Currently, the Council has

1. a continuing contract with the International Bank for Reconstruction and Development for 1976-79,
2. a new contract with the Governor's Office of Traffic Safety for 1976-78 (\$557,000 for 28 months),
3. a new DOT contract for 1976-77,
4. negotiating new contracts with
 - a. U. S. Forest Service for 1976-77 and
 - b. DOT on Airport Capacity study for 1976-77, and
5. negotiating new contract with Department of Public Welfare for 1976-77.

IMPLEMENTATION PLANNING

Activities Planned for the Immediate Future

Promising Areas of Research

Transportation is a dynamic area with the problems constantly changing with changes in society. Thus, it is impossible to anticipate the actual specific areas of future research. It can be seen, however, that a greater emphasis will be placed on using existing facilities rather than creating new facilities. In addition, it is anticipated that continued emphasis will be placed on human and social factors.

It is also anticipated that a large effort will be devoted to working with state and local agencies which are suddenly faced with mobility problems. An example is the Department of Public Welfare (DPW) which is discussing possible contracts with the Council to aid with their major transportation planning effort.

Staff Needs

1. Director increased to a minimum of 25 percent for 12 months; preferably 50 percent for 12 months.
2. Assistant Director increased to full time.
3. Administrative Secretary - An administrative secretary definitely is needed as a budget item.
4. Bookkeeping and Accounts - As accounts continue to increase, someone to maintain records must be provided.
5. Assistant to the Director - A professional to assist the administrative staff by representing the Director when needed, promoting research.

Space Needs

The administrative and support staff are currently housed in ECJ. Most offices have multiple occupancy with as many as four persons in an office. Proposed activities, i.e., information service, etc., requires additional space. It is hoped that the College of Engineering will be able to supply additional space.

Maintenance and Operations Funds

Current funds for maintenance and operations are inadequate to meet expenses, requiring that money be diverted from research and educational pro-

grams. Thus, an M&O increase is needed to cover expenses incurred. These expenses are currently being covered out of funds designated for research and education.

Travel Funds

Travel funds are extremely important to a unit such as the Council, since contact must be maintained with potential sponsors. Other units with which the Council must compete have significant travel funds which are used to promote research funds and to provide visibility.

Future Planning

The Council for Advanced Transportation Studies has a tremendous future if adequately funded and housed. A major problem in the United States is transportation. Thus, it is anticipated that both education and research will be needed in this area for many years. The Council can play an important role in this increased awareness and need for transportation. The Council because of its multidisciplinary nature is in a position to respond and provide leadership to any problem which is highlighted in the future. Without an adequate budget, the Council will not survive and a major program, which can provide national leadership and generate significant external support, will be lost.

Budget Options

In 1975-76 the budget for the Council was \$22,122 which was 67.7% of the 1974-75 budget of \$32,689, but even more important, this funding was only 35.2% of the requested budget of \$62,842. During this same period, external funds increased from \$402,294 to \$792,199, an increase of 197%. If the University and the Council are to successfully compete at a national level, adequate funding must be developed. It is mandatory that a substantial increase in state funds be obtained. An increase of 10 to 50 percent would be quickly utilized without producing significant relief. An increase of 100 to 200 percent would just begin to place the Council in a competitive position.

A decrease of 10 to 25 percent is of no particular consequence because the absolute amount of money is relatively small. It would, however, definitely have significant impact on the morale within the Council.

TABLE I

		Percent of Working Time in Unit by Activity*				
Name	Working Time in Unit	Research	Administration	Helping Others Do Research**	Public Service	Other
<u>Faculty</u>						
Dr. Thomas W. Kennedy, Director	20		50	25	25	
<u>Executive Committee</u>						
Dr. Lymon Reese, Chairman	2		100			
Dean Charles Burnette, Architecture	2		100			
Dean Wayne Danielson, Communication	2		100			
Dean Paul Olum, Natural Sciencess	2		100			
Dean Earnest F. Gloyna, Engineering	2		100			
Dean William Cannon, LBJ School	2		100			
Dean Ernest E. Smith, Law	2		100			
Dean George Kozmetsky, Bus. Adm.	2		100			
Dean J. W. McKie, Soc. & Beh. Sci.	2		100			
Dean Elspeth D. Rostow, Gen. & Comp. Studies	2		100			
Dean Stanley Werbow, Humanities	2		100			
Dr. Thomas W. Kennedy, Director	5		50	25	25	
<u>Budget Advisory Committee</u>						
Dr. Thomas W. Kennedy, Chairman	5		100			
Stanley Arbingast, Bureau of Business Research	2		100			
C. Shane Davies, Geography	2		100			
Hudson Matlock, Civil Engineering	2		100			
Lymon C. Reese, Ex. Officio	2		100			
<u>Academic Committee</u>						
Dr. Thomas W. Kennedy, Director	5		50	25	25	
J. W. Barnes, Mech. Engr.	2		100			
Ronald Briggs, Geography	2		100			
Alan Black, Arch and Planning	2		100			

*The total allocation of working time in various activities should be 100%.

**This column relates to time required to consult with or help others plan and conduct research employing specialized facilities or programs.

TABLE I

		Percent of Working Time in Unit by Activity*				
Name	Working Time in Unit	Research	Administration	Helping Others Do Research**	Public Service	Other
<u>Faculty</u>						
<u>Academic Committee (Cont.)</u>						
Patricia Burnett , Geography	2		100			
Barbara Chance, Sociology	2		100			
Hal Cooper, Civil Engineering	2		100			
William J. Dunlay, Civil Engineering	2		100			
Linda Golden, Marketing Admin.	2		100			
Henry Steiner, Management	2		100			
C. Michael Walton, Civil Engr.	2		100			
Gerhard Williams, LBJ School	4		100			
Martha Williams, Grad. School of Social Work	2		100			
William G. Lesso, Mech. Engr.	2		100			
<u>Traffic Safety Advisory Committee</u>						
Dr. Thomas W. Kennedy, Chairman	10		50	25	25	
Charles J. Holahan, Psychology	2		100			
Peter W. M. John, Mathematics	2		100			
C. Michael Walton, Civil Engr.	2		100			
Gerhard Williams, LBJ School	2		100			
<u>Principal Investigators</u>						
Stanley Arbingast, Bureau of Business Research	10	50		50		
C. Shane Davies, Geography	25	50		50		
Ronald Briggs, Geography	15	50		50		
Patricia Burnett , Geography	15	50		50		
Richard Dodge, Architecture	15	50		50		
William J. Dunlay, Jr. Civil Engr.	15	50		50		
Anthony Healey, Mech. Engr.	15	50		50		

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TABLE I

Percent of Working Time in Unit by Activity*						
Name	Working Time in Unit	Research	Administration	Helping Others Do Research**	Public Service	Other
<u>Faculty</u>						
<u>Principal Investigators (Cont.)</u>						
C. Michael Walton, Civil Engr.	15	50		50		
Mark Alpert, Marketing	25	50		50		
J. W. Barnes, Mech. Engr.	15	50		50		
Barbara Chance, Sociology	15	50		50		
Charles Clark, Business	15	50		50		
Hal Cooper, Civil Engineering	15	50		50		
Carol Deets, Nursing	15	50		50		
James Fitzsimmons, Management	15	50		50		
Edward L. Frome, Gen. Bus.	15	50		50		
John A. Gallery, Architecture	15	50		50		
Linda Golden, Marketing	15	50		50		
Larry Hoberock, Mech. Engr.	15	50		50		
Charles J. Holahan, Psychology	15	50		50		
Thomas W. Kennedy, Civil Engr.	15	50		50		
Paul Jensen, Mech. Engr.	15	50		50		
Robert G. Mather, Architecture	15	50		50		
B. F. McCullough, Civil Engr.	15	50		50		
W. Ronald Hudson, Civil Engr.	100	50		40	10	
Robert Means, Law	15	50		50		
Dudley Poston, Sociology	15	50		50		
Sandra Rosenbloom, Community & Regional Planning	15	50		50		
John H. Shortreed, Civil Engr.	15	50		50		
Craig C. Smith, Mech. Engr.	15	50		50		
James M. Treece, Law	15	50		50		
Gerhard Williams, LBJ School	15	50		50		

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TABLE I

		Percent of Working Time in Unit by Activity*				
Name	Working Time in Unit	Research	Administration	Helping Others Do Research**	Public Service	Other
<u>Faculty</u>						
<u>Principal Investigators, (Cont.)</u>						
Robert Young, Psychology	15	50		50		
Martha Williams, Social Work	15	50		50		
Walter S. Reed, Mech. Engr.	15	50		50		
<u>Professional</u>						
John F. Betak, Assistant Director - Research Coordination	100	50		40	10	
Grover Cunningham, Assistant Director - Administration	100	50	40		10	
David A. Sands, Assistant Director, Traffic Safety Program	100	50		40	10	
C. Wade Clifton, Social Science Research Assoc. V	15	50		50		
Thomas R. Hill, Center for Energy Studies	2		50	50		
John Huddleston, Social Science Research Assoc. III	100	50		40	10	
Patricia Hultman, Educ. & Trng. Specialist III	100	50		40	10	
Steve Linder, Research Engineer Assoc. II	100	50		50		
Ronald Linehan, Social Science Res. Assoc. III	100	50		50		

*The total allocation of working time in various activities should be 100%.

**This column relates to time required to consult with or help others plan and conduct research employing specialized facilities or programs.

TABLE I

Percent of Working Time in Unit by Activity*

Name	Working Time in Unit	Research	Administration	Helping Others Do Research**	Public Service	Other
<u>Professional (Cont.)</u>						
Hugh Williamson, Research Engineer Assoc. IV	25	50		50		
Charles P. Zlatkovich, Social Science Research Assoc. V	50	50		50		

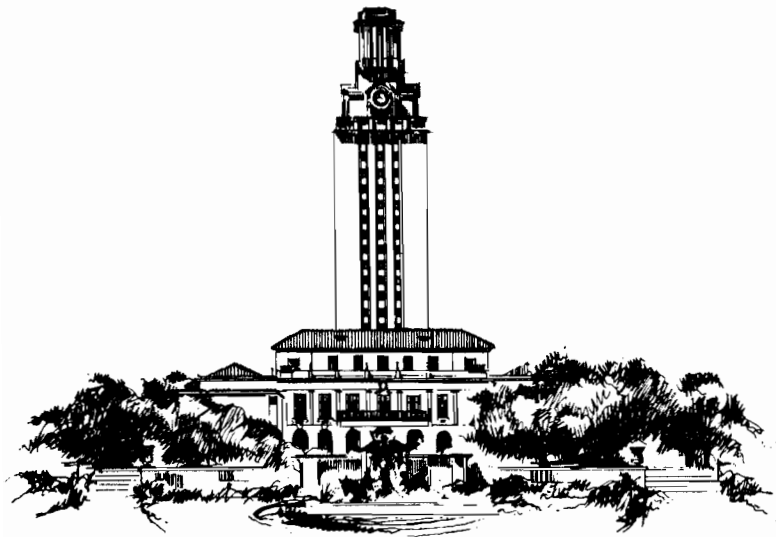
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