

NC ERGONOMICS RESOURCE CENTER  
AT  
NORTH CAROLINA STATE UNIVERSITY

CHARTER

**1. DESCRIPTION OF CENTER:**

The North Carolina Ergonomics Resource Center (Center) is a Public Service Membership Center specifically authorized by the North Carolina General Assembly and established through a partnership between North Carolina State University and the North Carolina Department of Labor (NCDOL), Division of Occupational Safety and Health (OSHNC) to assist employees and employers in the prevention of occupational trauma disorders (CTDs). Responsibilities and rights of Center Members are given in the attached Bylaws and Member Agreement.

**2. GOALS AND OBJECTIVES:**

The primary goals of the Center are to act as a bridge for technology transfer and information exchange between the university and industry, and to improve productivity, safety, and the well being of people in all sectors of business and industry, and government. The Center will support business and labor in their pursuit of humanizing the workplace and in maintaining viable and competitive jobs for the people of North Carolina. By emphasizing applied research and timely delivery of programs, the Center identifies, analyzes, and corrects ergonomic deficiencies in the workplace. In all of its programs the Center emphasizes employee participation and involvement. Employees provide invaluable information and feedback on current problems, evaluation and testing of proposed improvements, and assume an active role in implementing the recommended changes.

Center members will include companies from diverse and representative businesses in North Carolina. Member companies, through their representatives on the Center Advisory Board, will take an active role in preparing and shaping the Center programs and plans. Member companies will act as a catalyst for transferring the Center research findings to industry at large.

The primary objectives of the Center are:

1. Increased levels of productivity and quality as a by-product of maintaining ergonomically sound jobs and processes.
2. Reduction in lost time accidents/injuries known to occur when ergonomics is absent from the workplace.
3. Reduction in compensation costs by assuring timely return of injured employees to work and minimizing the potential for recurrence of their injuries.
4. Reduction in health and liability claims that may arise as a result of improper product design.
5. Reduction in training/retraining costs because of enhanced employment placement programs.

These goals and objectives will be met in three areas of industrial design:

1. Job Design: specifying job content, duration and scheduling of rest breaks, and sequencing of tasks within the job.

2. Workplace Design: specifying the physical characteristics of the hardware, including material handling devices, and tool design.
3. Product Design: specifying the physical characteristics of a product. This includes providing adequate instructions for use and insuring acceptable product quality.

The Center will provide a full range of programs, each of which is tailored to meet specific needs and goals.

1. Conducting ergonomic audits ranging from simple walk-through surveys for problem recognition to objective measurement and evaluation of workplaces/ jobs to determine the ergonomic soundness of the organization.
2. Developing and implementing improvement projects to address recognized deficiencies.
3. Conducting ergonomic training and awareness programs directed towards managers, engineers, supervisors, employees and medical personnel, as well as the public at large.
4. Testing and evaluation of existing consumer products to assess potential product deficiencies.

### **3. RELATIONSHIPS:**

There are no other centers or institutes at NCSU or at any other campus of The University of North Carolina comparable to the Center. Over the past decade, a strong industrial ergonomics outreach program has developed between the Department of Industrial Engineering, in the College of Engineering at NCSU, and the NC Department of Labor. This relationship is the basis for the Center, and as a result it will be located in the Department of Industrial Engineering, and administered by the Dean of the College of Engineering. Several other Colleges and Departments at NCSU also have academic and/or outreach programs in ergonomics that may be utilized by the Center. They will be represented in the Center on the Academic Policy Committee, and may be members of the Center Research Committee.

The Center utilizes an integrated approach for the recognition and solution of workplace problems. Therefore, although the primary focus is ergonomics, the Center also may call upon the skills and talents of faculty from various colleges at NCSU and from affiliated universities, OSHNC staff, and member companies.

### **4. THE DIRECTOR AND ADVISORY COMMITTEES:**

4.1 Director - The director is Dr. M. A. Ayoub, Professor of Industrial Engineering. He teaches and conducts research in ergonomics and occupational safety, and devotes all of his time to the implementation of his research findings to companies, industrial concerns and government agencies throughout the United States. Dr. Ayoub is a member of several national and international professional societies, a Fellow of Institute of Industrial Engineers, and the recipient of many awards and citations, including an Outstanding Achievement in Work Measurement award and a Distinguished Research Award from Industrial Engineering, an Industrial Applications of Ergonomics Award from the Human Factors Society, and Outstanding Faculty and Outstanding Teacher Awards from NCSU.

4.2 Advisory Committees - There are three advisory committees, with duties as outlined below and in the Bylaws:

- a. **Academic Policy Committee.** The Academic Policy Committee is comprised of the Deans of each of the Colleges and Schools of the University (or their designees), and one

representative appointed by the Vice Chancellor for Research, Outreach and Extension (Vice Chancellor). The committee will be chaired by the Administrative Dean, and will have the responsibility of reviewing research and outreach services proposed by the Center Advisory Board to assure compliance with University goals and policies, and to provide direct information to the University Administration regarding activities of the center faculty.

- b. **Center Advisory Board.** The Center Advisory Board (Board) will have eight voting members. The Commissioner and the Dean each will appoint to the Board one non-management employee and one management employee selected from Member Companies, and one member from the public at large. In addition, the Commissioner of Labor and the Administrative Dean will each appoint one member of their staff to the Board. The Center Director will be an ex officio member of the Board. The staff member appointed by the Commissioner will serve as Chair of the Board. It is the responsibility of the Board to oversee the operations of the Center. The Board will receive, modify and approve the Annual Plan of the Center, review and approve the Center programs and projects, determine Center fees, give advice regarding the development of intellectual properties, establish a schedule of services and approve By-Law or policy and procedure changes. The Board will report its actions and make its recommendations to the Administrative Dean and the Commissioner at the conclusion of each meeting. Final approval of board actions will be made by mutual agreement between the Administrative Dean and the Commissioner.
- c. **Center Research Committee.** The Center Research Committee will be comprised of at least six (6) faculty and research scientists appointed jointly by the Administrative Dean and the Commissioner. Members of this committee will be representative of the disciplines and units that have a substantial involvement in the activities of the Center. The committee will review and recommend worthy research projects for Center funding to the Board.

4.3 OSHNC monitor. A monitor will be appointed by the North Carolina Commissioner of Labor to monitor and evaluate the quality of work by the Center and the degree to which it meets industrial and compliance needs. The monitor reports directly to the Commissioner. It is the monitor's responsibility to give an unbiased view of the success of the Center and its strengths and weaknesses.

4.4 Affiliates - There are two types of affiliates to the center:

- a. **Affiliate Practitioners.** The Center may contract with ergonomic service providers to deliver Center services such as ergo snapshots, monitoring, training, etc. In addition, the Center shall maintain a directory of ergonomic service providers for reference, but shall make no representation as to the qualifications of such providers. When the services of these practitioners are required, a work plan and budget will be submitted and processed using standard University policies and procedures.
- b. **Affiliate Universities.** The Center may invite universities and private colleges in North Carolina to participate in various projects in concert with the overall mission of the Center. The affiliate universities may be asked to deliver the Center program and services in their respective areas of the State. Projects with Affiliate Universities will be processed through normal university channels.

## 5. BUDGET ESTIMATES

Through special appropriations from the North Carolina General Assembly, the North Carolina Department of Labor will provide the base funding for the Center. A Memorandum of Understanding between NCDOL and NCSU details the relationship, budget and allocation. The

Center will receive most of its funding from the member companies and business concerns in North Carolina. Chart 1 shows the Center budget for the first five years.

Membership fees will be recommended by the Center Advisory Board, and approved by mutual agreement of the Administrative Dean and the Commissioner of Labor. For nonmember companies and industry-at-large, fees are quoted based on the type and scope of selected programs. Quotations are available for all programs ranging from a walk-through survey to total development and implementation of comprehensive ergonomic programs.

## **6. SPACE NEEDS**

Center will be staffed by experienced ergonomists, occupational health nurses, and physical/occupational therapists (see Chart 2). These professionals will be supported by a team of publication and media specialists as well as several laboratory technicians and software developers. Through special arrangements, medical and related services are delivered by affiliate universities and practitioners.

For the first two years, the Center will require about 2500 sq. ft. to house its staff and laboratory. Since there is no space currently available at NCSU, the Center will rent commercial space within 15 to 20 miles of the main campus. After the first two years, plans to house the Center at NCSU's Centennial Campus will be considered. If not available, the Center will continue to be housed off-campus.

## **7. EFFECTS ON INSTRUCTIONAL PROGRAMS**

The Center, through its research programs and state-of-the-art laboratory will have the potential to enhance and further develop existing ergonomics courses and programs. Students and faculty with interest in ergonomics will have a steady supply of practical and challenging problems that would form the basis for many worthwhile dissertation and thesis research topics. The Center will provide opportunities for undergraduate students to carry out their senior design projects at member companies.

When warranted, Center will augment and enhance its professional resources by relying on the skills and talents of faculty from various NCSU colleges and from affiliate public and private universities, and from affiliate practitioners throughout North Carolina. The Center will advance the cause of ergonomics across The University of North Carolina and these other colleges and universities in North Carolina by providing opportunities for direct funding of relevant research projects.

The Center will utilize several state-of-the-art systems for conducting basic and field research in ergonomics. The Center laboratory is equipped with micro- and minicomputer-based systems that are configured to allow for optimum utilization of resources during data collection and analysis. Specialized equipment and instrumentation are also available for the conduct of one-of-a-kind projects. The Center laboratory will be available for members and affiliates in pursuit of specific Center collaborative studies and projects with center personnel.

## **8. ORGANIZATION**

The Dean of the College of Engineering will act as the Administrative Dean of the Center and will have primary University oversight responsibility for the operation of the Center, Center programs, allocations of resources, Center By-Laws and compliance with policies and procedures.

Day to day management of the Center will be the responsibility of the Center Director who will implement the plans and policies of the Academic Policy Committee and the Commissioner of the

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North Carolina Department of Labor. A Center Advisory Board will give advice about the operation of the Center and make recommendations to the Dean and the Commissioner (See Chart 3).

Duties and responsibilities of the Administrative Dean, the Director and the various Advisory Committees are outline in detail above and in the Bylaws.