WORKING PROPOSAL

Objectives:

1. Individualized oxygen system for victims of chronic lung disease. It will make multiple blood tests on patients now needed to determine oxygen and carbon dioxide in the blood unnecessary. It will reduce them and possibly eliminate patient visits to the hospital. It will provide greater relief for victims of chronic lung disease including those with black lung disease from coal mining. The short range objective is development of the individualized supplemental oxygen system to be used in the home or on the person. The long range objective is the development of an artificial heart-lung.

2. Develop practical artificial organs for heart and lung (as indicated above) kidney and pancreas. Included is the development of devices to assist the failing heart and a portable suitcase dialysis machine for patients with renal failure. Special attention will be given to miniaturization at lowest possible costs.

3. Computer assisted diagnosis and patient management for both patients with medical problems and surgical problems. Included are such objectives as early diagnosis of heart attacks in the emergency room, early diagnosis of conditions requiring surgery such as in patients presenting with abdominal pain. Automated evaluation to determine expensive tests such as brain scanning should be done. New uses for the computer which go beyond the recent breakthrough in computer brain scanning and total body scanning.
Equipment

Oscilloscopes

Voltmeters, test generators

Lab supplies

Computer system; such as PDP 11/70

Microprocessing components

Oxygen supplies

Oximeter, implantable sensors

EKG machine

Pulmonary function testing equipment

Flow meters

Various pumps and pump components

Monitoring equipment

Catheterization equipment

E-ray equipment

Animal facilities

Computer supplies

Medical supplies: drugs, examining equipment

Office supplies and equipment