

allocation of funds and the decision as to which type of project should or should not be supported.

Mr. ROGERS. I am fairly familiar with your procedure and I think it is generally pretty good. Although I think we need very high competency in the staff because it is the staff these groups must rely on in giving them advice as to which ones they think should be done.

Dr. MASLAND. Certainly, I would not question that.

Mr. ROGERS. Finally, are there any breakthroughs that you see in the immediate future that need special funding or need special effort? Are we making some progress in any particular areas?

Dr. MASLAND. We have made considerable progress in eye research. In fact, I think the advances in this field are as great as in any area that we have. I share the concern also that we are not doing everything that could or should be done. It is a tremendously challenging field and the opportunities are there. I don't question this for one moment. We need more cooperative studies than we now have. We need additional centers. There are definitely ways that this program can be strengthened.

Mr. ROGERS. Would you let the committee have your suggestions on this, please, and where you think most effective work can be done and possible suggested funding.

Are there any particular exciting breakthroughs in view right now?

Dr. MASLAND. That is always a dangerous prediction to make.

Dr. STEWART. We are counting on a rubella vaccine which will have an effect on the blindness in babies that occurs when pregnant women contract rubella. That is the German measles vaccine.

While the children born of these women have multiple congenital defects, ophthalmological problems are high on the list. We are very hopeful of getting this vaccine.

(The following information was subsequently submitted:)

PROMISING RESEARCH OPPORTUNITIES IN VISION

Research accomplishments of the last decade have opened up a number of new research opportunities in vision research. Every detail in the knowledge gained regarding the processes of sight and eye disease has introduced fundamental questions which yet must be answered.

In broad over-view, it is clear that epidemiology in the ophthalmological field offers significant rewards in our understanding of the occurrence and distribution of various diseases affecting the eye and may illuminate many etiological factors. While epidemiology in ophthalmology is relatively new, it beckons with the rewards of necessary research in a wide number of areas, such as diabetic retinopathy, glaucoma and uveitis. Such epidemiological work requires, by its very nature, the employment of biostatisticians and epidemiologists, in addition to the interested ophthalmological personnel.

Genetic studies in diabetes and microangiopathy are greatly needed. We need to know more about the possible changes, the response to normal and abnormal insulin, the sulfonyleureas, autonomic agents, and hormones, as well as the role of genetics in prognosis.

In addition, exploration is indicated in the influence of pituitary extirpation and photocoagulation on diabetic retinopathy. Since these are only ameliorative, it is essential that understanding be attained in the basic biochemistry and physiology of this disease. Diabetes mellitus has been singled out here only as an example. Many other areas of research in eye disease are equally demanding.

Pediatric ophthalmology and optometry are relatively new as comprehensive entities, although clinical practices have usually included children. These subspecialties emphasize the need for further research in experimental embryology projects; the effect of hyperbaric oxygen on the immature and mature retina; brain and ocular pathologic studies; the evolution of perception; the etiology of amblyopia; dyslexia; cerebral dominance, handedness and eye dominance;