

July 23, 1963

Dr. Thomas L. K. Small
Director, Office of Grants & Research Contracts
National Aeronautics and Space Administration
Washington 25, D. C.

Dear Dr. Small:

I am writing this letter of inquiry regarding research support from NASA of studies now being developed at this research center. This letter follows the announcement in the AIBS Bulletin of October 1962. There are three programs which bear on the biological programs of NASA: the analysis of EEG signals; modifiers of hallucinogenic experiences in man; and, the effects of experimental compounds on the illusory experiences in perceptual isolation chambers.

For a number of years we have been studying various ways of measuring changes in brain wave potentials induced by psychiatric treatments. The initial techniques were hand analysis followed by frequency analysis using resonant filters. In the past six months we have developed a program for computer analysis of EEG signals, using an IBM 1620-1710 system. The first program is now running and provides us with an offline spectrum of the EEG frequencies and aptitudes. The program permits variable baselines, variable time periods and variable frequency bands.

In the second program we are using anticholinergic hallucinogens to induce psychotic states in dogs and man. We are examining a variety of compounds for their blocking activity of this psychotomimetic effect. The first compound of a series that is effective in both man and dogs is now being prepared for direct clinical trial.

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-2-

July 23, 1963

The third study program is awaiting the completion of an isolation chamber. This will be completed by the end of October. It is our plan to assess a variety of psychotropic compounds, as well as those compounds found to be successful in the anticholinergic screen for their ability in modifying illusory sensations occurring in an isolation chamber.

In both the latter two programs, EEG analyses provide a concurrent measure of changes in behavior.

The Missouri Institute of Psychiatry is a research center created by the Division of Mental Diseases of the State of Missouri. The staff is made up of full-time investigators. The Institute has as its facilities a 150 bed research unit, 20,000 square feet of laboratory space, a computer unit and medical library, etc. Scientists are appointed concurrently to the staff of Washington University.

If any of these programs are of interest to the biosciences program of NASA, I should appreciate an opportunity to discuss these with a representative.

Sincerely yours,

Max Fink, M. D., Director
and
Research Professor,
Washington University School of Medicine

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