

the symposium on health services (2-3 July).

The last of these questions is approached by identifying those areas of health services where research is needed: organization and decision-making in clinics and ambulatory services, the staffing and supervision of care in hospital wards, the productivity of laboratories and other supporting services, and the coordination of all of the organizational elements in the system.

Technologies for introducing technological innovation and for evaluating the effects of new programs will be discussed. To some extent these techniques are drawn from the experience of the behavioral and managerial sciences in industrial settings, but the roles of patients and physicians force important modifications. It is relevant also to assess the potential assistance of

computerized data bases to the decision processes of physicians and administrators. A goal of the first half of the symposium will be to examine the mechanisms of coordination of the many health care delivery services that protect and promote the health of the population.

The second half of the seminar will be devoted to planning. In most communities the present array of health services are not adequate to the needs of a growing population. They may lack the capacity, the distribution, and the coordination required for comprehensive care. The awareness of the need for planning of health services is strong throughout the Americas. Increasingly sophisticated planning models and methods are being developed. Such models take into account forecasts of population change; the effects of the physical, economic, and social environ-

ment on health; and the economic and behavioral factors influential in transforming need to demand. They also consider political factors and the competition of other human needs for national resources. Converting a statement of needs for health services into a plan calls for tests of feasibility and for inquiry into manpower training requirements and the organization structure for placing responsibilities upon national and regional levels and upon the individual whose health is at stake.

The sponsor of the symposium is the Operations Research Society of America. Coordinators are Charles D. Flagle (Johns Hopkins University), Luis Castelazo Ayala (Mexico), and Jorge Ortiz (Mexico).

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## **26-27 June**

### **Neurohumoral Coding of Brain Function**

Important discoveries are being made today along a wide front of research pertaining to the function of the brain. In consideration of this fact, a symposium (26-27 June) will be devoted to a discussion of a number of significant highlights in this scientific endeavor. All of the invited participants have been involved in the investigation of some aspect of a chemical mechanism underlying a specific neural system. As a result, current evidence on the possible basis for neuronal "coding" of cerebral function will be presented from molecular to molar viewpoints: at the intracellular, extracellular, and transsynaptic levels as well as within different anatomical regions.

Participating in the first section will be R. Tapia (Mexico), P. McGeer (Canada), F. Bloom (United States), D. J. Reis (United States), and J. W. Phillis (Canada). They will discuss the molecular and cellular events related to cerebral excitability, axoplasmic transport, inhibition in the cerebellum, dynamics of catecholaminergic neurons, and cholinergic transmission in the cerebral cortex. In the second section, involving M. Russek (Mexico), R. D. Myers (United States), V. Alemán (Mexico), L. Stein (United States), and I. Izquierdo (Argentina), basic research findings will be described on the neuro-

humoral mechanisms within different regions of the brain involved in vital regulatory functions; these include feeding, drinking, body temperature, epileptogenic seizures, reward, and punishment. The third session will integrate information on the essential neurochemical factors in connection with complex cerebral functions including sleep, wakefulness, vigilance, conditioning, and memory. The speakers will be H. Brust-Carmona (Mexico), J. McGaugh (United States), M. Monnier (Switzerland), R. R. Drucker-Colín (Mexico), M. Radulovacki (United States), A. Fernández-Guardiola (Mexico), and P. Morgane (United States). The final session will integrate information on normal and pathological behavior. H. Himwich (United States), H. Sabelli (United States), R. Broughton (Canada), A. G. Karczmar (United States), and

E. Roberts (United States) will discuss a set of topics including the role played by biogenic amines and neuroendocrine substances in the conditions of schizophrenia, depression, inhibition, and other behavioral states.

Co-arrangers of this symposium are R. R. Drucker-Colín (Mexico) and R. D. Myers (United States).

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## **4 July**

### **Behavior and Violence**

Co-arrangers: Santiago Genovés (University of Mexico) and J. P. Scott (Bowling Green University, Bowling Green, Ohio).

The symposium is concerned with violence and behavior, not only on a biological or sociological level, but also on the integration and interaction of both. Papers will attempt to establish the present state of knowledge and suggest roads for future research. Standardization of terminology within this field will also be discussed.

Participants include A. Fernández-Guardiola, J. M. Velazco-Alzaga, R. Díaz-Guerrero, J. Saxe-Fernández, R. Tamayo, B. Ginsburg, F. H. Bronson, K. Pribam, R. Holloway, E. Rubinstein, and S. Ball.

**Registration  
and Travel Forms  
for Mexico City  
are in the  
23 March issue  
of SCIENCE**