

WANTED:

$$\ddot{p} = \nabla(p \cdot g)$$

Systems Thinkers for Planetary Exploration

Bellcomm has immediate openings for highly imaginative, hardheaded systems thinkers who can plan what will be needed for Manned Space Flight missions to other planets in the years ahead and can begin fulfilling those needs today.

Scientists and engineers at Bellcomm not only must determine what new rockets, propulsion systems and other hardware and software are needed for the future but what new knowledge must be learned to accomplish this.

Bellcomm, systems engineering contractor of the National Aeronautics and Space Administration, needs qualified men in fields ranging from physics to guidance equations, computer science to systems analysis—men with the vision to think years ahead, innovating newer technology for America's long-range program of space exploration.

If you are a creative thinker, not frozen to today's ideas, you may want to work with Bellcomm on advanced systems. Send your résumé in confidence to Mr. N. W. Smusyn, Personnel Director, Bellcomm, Inc., Room 1403-J, 1100 17th St., N.W., Washington, D.C. 20036. Bellcomm is an equal opportunity employer.



Bellcomm, Inc.
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Since 1964 he has directed an instruments-and-aids project to develop materials for blind scientists and technicians. If any physics teacher has conceived a device that he thinks would benefit blind students and scientists, Benham would like to hear about it. Through the use of such materials, says Benham, "an intelligent blind youngster with a spark of ambition no longer needs to look to a future of making mops and caning chairs."

Summer programs

The Scottish universities summer school, Rensselaer Polytechnic Institute, Pennsylvania State University, the Latin-American school of physics and Fairleigh Dickinson University have recently announced summer courses.

The seventh annual Scottish Universities summer school in physics will take place 1-20 Aug. at Newbattle Abbey, near Edinburgh. Courses will treat electromagnetic interactions of hadrons (experimental and theoretical), semiphenomenological models of high-energy scattering, current algebras and symmetries of weak interactions. Thus far, L. van Hove, S. Drell, R. Wilson and P. Kabir have accepted invitations to participate. Applications (with a recommendation) should reach Dr. D. J. Candlin, Tait Institute, 1 Roxburgh St., Edinburgh 8, UK, by 21 May. The course fee, including accommodations, is £25.

The Rensselaer Polytechnic Institute Hartford graduate center is offering a graduate-level course on space-flight principles, 6-10 June. The course will cover solar-system physics, vector mechanics, orbital theory, transfer orbits and navigation, perturbations and propulsion. Fee for the course, including all materials and lunches, is \$165. Applications can be obtained from Special Programs Section, Rensselaer Hartford Graduate Center, East Windsor Hill, Conn. 06028.

The Pennsylvania State University materials research laboratory will again sponsor a two-week course from 31 May to 10 June on modern methods for preparing and characterizing ma-

terials. Emphasis will be on such high band-gap materials as oxides, sulfides and halides. The program will cover crystal growing, material characterization by x-ray, electron-microscope, microprobe, and spectroscopic technique, elemental analysis, and characterizing of point, line and surface defects. Further details are obtainable from Prof William B. White, Materials Research Laboratory, The Pennsylvania State University, University Park, Penn. 16802.

The Latin-American School of Physics will be held this year in Caracas, Venezuela, from 4 to 29 July. Lectures and seminars will deal mainly with statistical mechanics, elementary particles, nuclear and solid-state physics. For further details, one can write to M. Bemporad, Latin-American School of Physics, Venezuelan Section, Apartado 1827, Caracas, Venezuela.

Fairleigh Dickinson University in Madison, N. J. has announced one-week workshops in spectroscopy and molecular structure and fine-particle properties. The first, from 27 June to 1 July, will involve principles and application of ultraviolet, infrared, nuclear-magnetic-resonance spectroscopy and mass spectrometry in determining molecular structure. Total cost of \$190 includes tuition, room and board and all workshop materials. Further information is available from Dr. R. A. Baylouny of the chemistry department. The second program, from 11 to 15 July, concerns fine-particle size, shape, distribution, surface area and porosity. Tuition fee is \$125, and dormitory room and board are \$65. Details on this course are obtained from Dr Saul Gordon, director of Fairleigh Dickinson's thermoanalysis institute.

Computer users' group

The EAI Analog Computer Educational Users Group has recently announced formation to meet the needs of those desiring to use analog computers in physics teaching and research. This nonprofit organization issues a newsletter and application notes on a regular basis. Further information and copies of publications can be ob-