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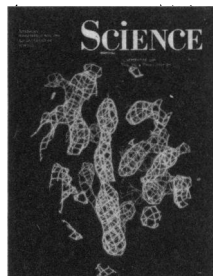
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**COVER** Electron density, at 3.0 Å resolution, of human rhinovirus 14 complexed with the antiviral agent WIN 52084. This and related compounds inhibit viral uncoating after the virus has become attached to the cell and penetrated the membrane. Shown is the molecular interpretation of the electron density which is not seen in the native structure. (The compound consists of a 4-oxazolinyloxy group linked to a 3-methylisoxazole group by a seven-membered aliphatic chain.) The compound binds into a hydrophobic pocket with viral protein 1, lined by residues that are relatively well conserved among picornaviruses. See page 1286. [T. J. Smith *et al.*, Purdue University and Sterling-Winthrop Research Institute]

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## Sigma Xi: Companions in Zealous Research

This is the centennial year of Sigma Xi, an honor society that has included within its ranks many of America's most distinguished scientists and engineers. In the past, the society had a very useful role in promoting collegiality and interdisciplinary research. Now with its 115,000 members and 500 chapters and clubs, it has interesting potential for future significance that an imaginative leadership is seeking to foster.

At the time of the founding of Sigma Xi at Cornell University in 1886, the number of scholars conducting research in this country was small, and they were in need of mutual reinforcement. In their initial statement of their objectives, they emphasized "friendship in science" and went on to say, "While those whose heart and soul is in their work are coping with the great problems of nature, let them remember that the ties of friendship cannot be investigated, but only felt. Let them join heart and hand forming a brotherhood in science and engineering . . ."

Another tradition established by the founding chapter was that Sigma Xi's emphasis should be on honoring capability or achievement in research. In addition, the chapter should conduct meetings "to discuss scientific subjects."

For much of a century, these objectives and procedures sufficed to lead to the creation of many chapters and the formation of clubs. But with the enormous growth in the number of scientists and engineers, the role of Sigma Xi has changed at some institutions. At large research universities, there may be only one local meeting per year of the Sigma Xi chapter, and that to initiate new members. However, at other chapters, there are multiple meetings and additional activities such as fostering secondary level education in science. Some chapters have been experimenting with small group tours. Chapter members have also assisted in selecting recipients for many small research grants to young scientists.

With its many chapters and clubs, Sigma Xi is in an excellent position to tap informed opinions at the grass roots level. Members have been chosen for their excellence in research, and more than 75 percent have Ph.D. degrees. In addition, they are a multidisciplinary group, with a percentage composition as follows: physical and earth scientists, 27; biological scientists, 26; engineers, 21; and health, 8, agricultural, 6, social, 6, and computer scientists, 5.

As part of its centennial celebration, the headquarters staff at Sigma Xi, headed by Executive Director C. Ian Jackson, has queried a sample of the membership concerning attitudes about many questions bearing on the scientific enterprise. For example, responses that were almost unanimous were concerns about the state of precollege education in science and about the ignorance and fear of science that are thought to be present in the general population.

Another recent initiative by the headquarters staff of Sigma Xi led to an innovative use of teleconferencing involving more than 60 Sigma Xi chapters or clubs. The particular event was a cooperative venture with the Department of Energy exploring the global greenhouse effect. The effort was designed to interest students in the phenomenon. Sigma Xi organized the meetings at both the sending and receiving ends. Today, more and more universities are establishing facilities to receive television lectures by satellites. Some have both uplinks and downlinks. In time, teleconferencing is likely to become one of Sigma Xi's important activities.

In the September-October issue of *American Scientist*, Sigma Xi's excellent interdisciplinary journal, Michael Sokal makes the point that to be successful an organization like Sigma Xi must occupy a particular useful niche in the ecology of human organizations. In planning for its centennial, Sigma Xi avoided emphasizing one grand event; rather, it has sought to define an appropriate niche for the society in the late 20th century. Some values will remain, however, including those formulated by the founders with their motto, "Companions in Zealous Research."—PHILIP H. ABELSON