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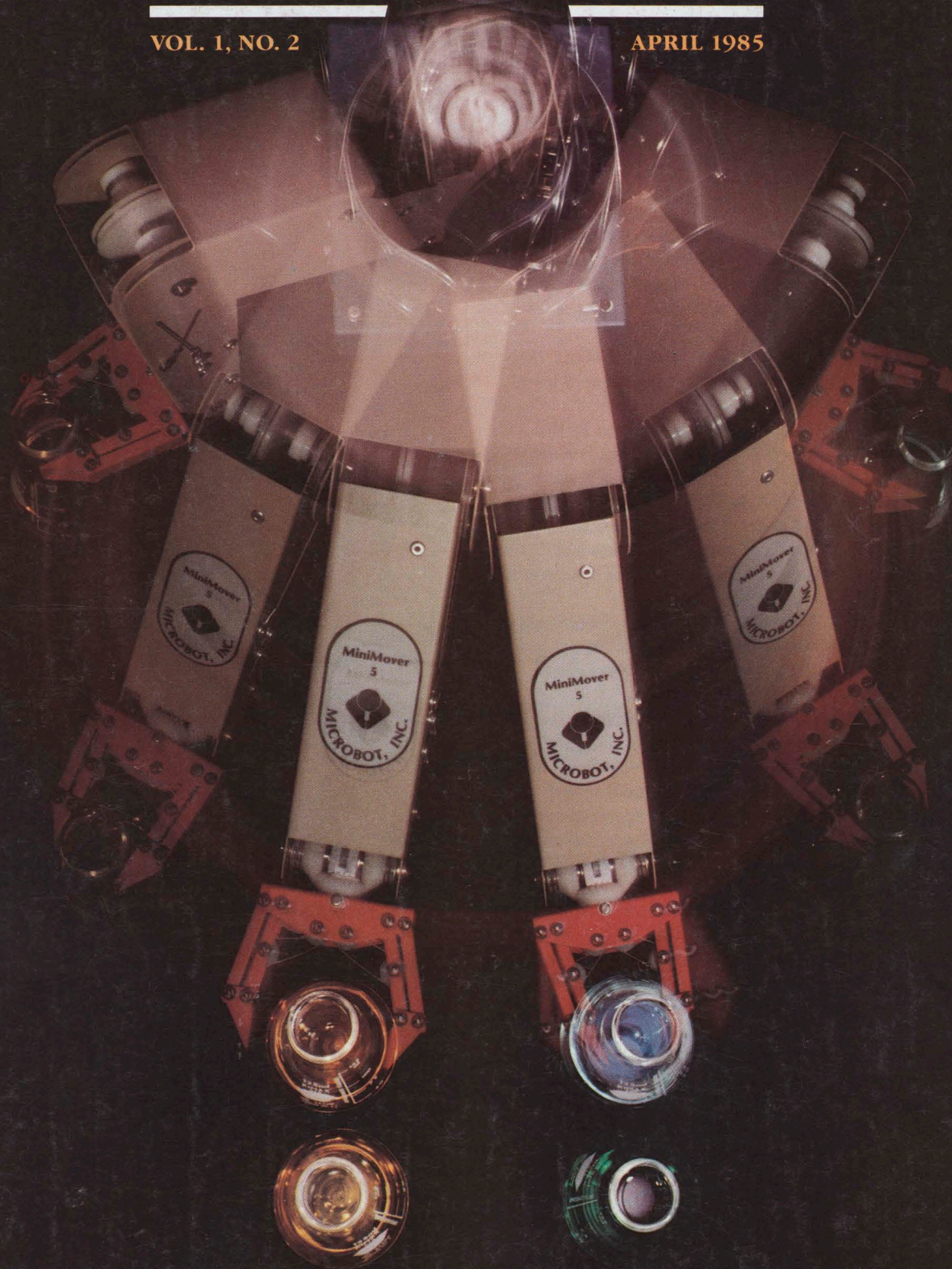

RESEARCH IN ACTION

PAGE 18

The Scholar at Work

Scholarly research has often been accompanied by a sense of mystery, but perhaps never more so than in this 1652 etching by Rembrandt. It shows a scholar in his study, wearing his academic gown and surrounded by books and notes, startled by the sudden appearance of a luminous globe. Its mystical inscription, reflected in a mirror, is pointed out by a ghostly hand.

The etching is generally thought to represent Doctor Faustus, the legendary medieval philosopher who sold his soul to the devil in exchange for knowledge.

Few modern scholars would admit to such contracts, or for that matter to such dramatic revelations. Nevertheless, their work remains tinged with mystery to most of us, and their dedication to it seems driven by a fascination that few of us can share. After all, how many of us know any subject so well that we can question its facts, challenge its assumptions, and extend its boundaries to create new knowledge? Yet to the scholar that process, which remains so mysterious to most of us, is an essential part of learning. It is called research.

The word *research* itself is derived from the Latin *re-* (again) and the French *chercher* (to seek). The dictionary defines it as "careful, patient, systematic, diligent inquiry or examination in some field of knowledge, undertaken to establish facts or principles."

While that definition is accurate, it gives little hint of the breadth of research or the importance of its findings. For the past four hundred years or so, research has achieved its most dramatic discoveries in the sciences. Perhaps for that reason, we often link the word *scientific* with the word *research* and thus unconsciously limit our appreciation of its real scope. In fact, at Syracuse as at other major universities, research stretches across every discipline and involves every one of the University's schools, colleges, and departments.

Because research is such an integral part of scholarly activity, no one is quite sure just how much of it goes on at Syracuse. Many projects are carried on by individual faculty members, using no more resources than a few books—and, of course, their minds and their impressive stores of personal knowledge. Other projects are more elaborate, requiring dozens of assistants, sophisticated equipment, and special laboratories that cost hundreds of thousands of dollars to establish and maintain.

The full cost of such research is not borne by the University alone. In many cases, financial support comes from corporations, foundations, and government agencies, which sponsor research projects in order to share in the benefits of their discoveries. More than 400 such projects are currently under way at Syracuse, carried on by more than 300 faculty members under grants and contracts that total $24.5 million annually.

In the article that begins on page 18 of this issue, we have made no attempt to survey the vast array of research projects at SU. (To do so, in fact, would be a major research project in itself.) Nor have we necessarily selected the largest or the most important.

Rembrandt van Rijn, Doctor Faustus, *etching, 1652. Syracuse University Art Collection.*

What we have tried to do is to present a down-to-earth picture of research in action. To assemble that picture, we have described just 10 projects that we think offer some glimpses into how research projects come about, how they are carried on, and how they lead to the creation of new knowledge.

We hope you find them as interesting as we do.

David May
Editor

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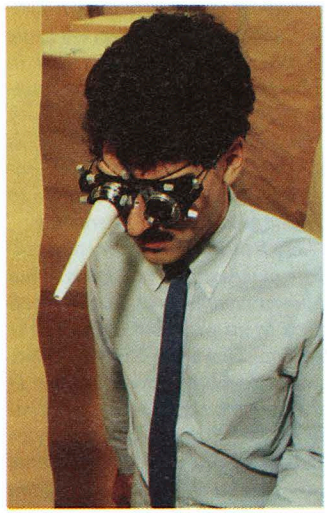

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Photographs
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On the Cover
Professor Daniel Macero and graduate student Brian McGrattan are teaching a small robot to perform common laboratory functions. The time-lapse photo here shows the device bringing one flask to rest, then grabbing another and moving on to test its contents. Macero's work is one of 10 research projects described in this issue, beginning on page 18.