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Inside CART: Center for Advancement of Research and Teaching

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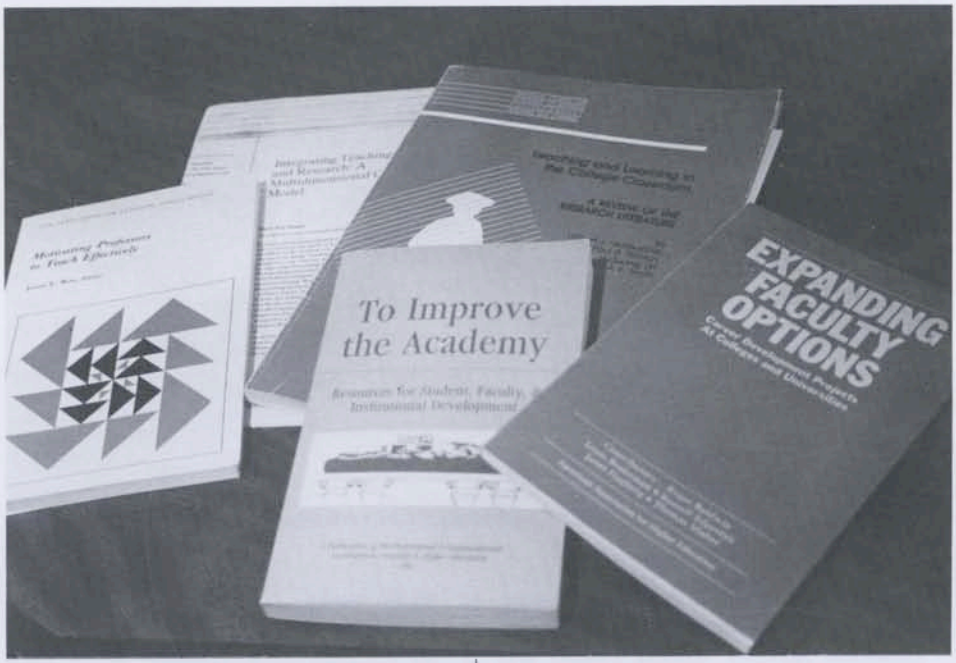
CENTER FOR ADVANCEMENT OF RESEARCH AND TEACHING



Research and teaching are to a great extent solitary activities. Even researchers working in groups spend many hours alone, performing experiments, recording and analyzing data or examining documents and reading specialized journals. Teaching, too, although in obvious ways a very public activity, also has its solitary side; each classroom session may require many hours of preparation: keeping abreast of new developments in one's field of study, designing a syllabus, planning classroom lectures and discussions, composing essay and project assignments, writing examinations.

College faculty experience another kind of isolation on a campus like Bridgewater's, where academic buildings are widely separated and some departments are literally on "the other side of the tracks." Humanities and Political Science faculty offices are in Tillinghast Hall and their classrooms in Boyden and Harrington; across campus (and the tracks), Math and Behavioral Science faculty spend their working days at the Burrill Avenue Academic Complex. College committees and occasional social gatherings provide only scattered opportunities for faculty from opposite sides of the campus to meet and learn what students are doing in one another's classes.

Another kind of isolation comes from the "information gap." Engaged as they are in reading about current work in their own fields, it's difficult for faculty members to keep up with research on teaching in general and on new applications of computer technology to teaching.

Bridgewater's Center for the Advancement of Research and Teaching (CART), established last year by John Bardo, Vice President for Academic Affairs, was designed as a way of addressing these problems. Co-directed by Uma Shama of the Math and Computer Science Department and Karen Stonely of Management and Aviation Science and located on the second floor of the Maxwell Library, CART provides a centralized location for resource materials on teaching and education technology. The Center subscribes to periodicals like the *Chronicle of Higher Education* and *The Muse*, published by the Professional and Organizational Development Network, and purchases books and videotapes on teaching and classroom research. CART has also begun to assemble a variety of up-to-date computer hardware and software, including two Leading Edge PC's, an IBM RS/6000 workstation, a Hewlett-Packard text/graphics scanner, and a Toshiba CD ROM player, as well as WordPerfect word-processing and Harvard Graphics software.

The best way for faculty to learn whether or not this technology can enhance their teaching and research, Directors Shama and Stonely emphasize, is by experimenting with it. The text/graphics scanner, for example, has already proven useful to several faculty members. In one instance, an author produced a manuscript using the word processing program Wordstar, while a co-author wishes to edit it using a different program, WordPerfect. In the past, in order to create a file in WordPerfect, the co-author

would have had to re-type the entire manuscript. Using the scanner, however, she was able to transfer her collaborator's typewritten text directly onto her own disk, thereby eliminating the tedious process of re-typing. In addition to text, the scanner can also copy photographs or illustrations from a page onto a disk, and users can adapt these pictures to suit their needs — enlarging, zooming in, adjusting photographic exposure or making other kinds of changes.

The IBM RS/6000 work station (a work station is a very powerful PC) has also been put to use by, among others, Prof. Will Chipman of Chemical Sciences. Using a program called MOPAC, Prof. Chipman is able to create models of certain molecules and to calculate the location of electrons within these molecules. The advanced graphics capability of the RS/6000 makes three dimensional color modelling possible, so that Prof. Chipman can read the bond angles of his models, rotate them in space and gain insight into the ways in which these molecules react with other molecules. Seeing the spatial relationships of atoms and electrons allows an understanding of intramolecular structure that would be difficult to attain otherwise. Before the invention of powerful computers like the RS/1000, molecular modelling at the subatomic level was not feasible because of the enormous amounts of data and the complexity of the atomic interrelations involved. The RS/6000 not only works rapidly but also stores data while it is working so that it can use this data again.

CART co-ordinators Shama and Stonely have alredy arranged several programs designed to introduce faculty to the Center and to encourage them to share ideas about teaching. Orchard Computers and IBM have presented workshops at the College. Shama and Stonely's most ambitious effort so far was the CART Sampler Day, thoughtfully scheduled on May 14 — a day after the deadline for submission of final spring semester grades but before the beginning of summer vacation — and attended by about 60 faculty.

CART Sampler Day included six workshops on Technology Applications and four on Faculty Development, running concurrently. Some of the technology sessions were designed for computer novices, while others appealed to afficionados. Information Services' Robert Plouffe and Erik Sironen conducted sessions on WordPerfect, the Hewlett-Packard scanner and Internet, a system which connects academic computers around the world. Madhu Rao of Earth Sciences and Geography demonstrated Geographic Information Systems (GIS), which uses CD-ROM technology, and IBM representative Steve Hansel displayed his company's Advanced Academic System for custom designing one's own software. The Faculty Development sessions began with a multidisciplinary discussion of fieldwork and internships by Ruth Hannon, Psychology; Robert Boutilier, Geology; Rebecca Leavitt, Social work and Curtiss Hoffman, Public Archeology. Professors Stonely, Shama and Gail Price of Math conducted a workshop on the case method approach to faculty development; Vernon Domingo of Earth Sciences and Georgraphy demonstrated classroom use of Simulation Activities and Susan Holton, who is currently Assistant to the President, conducted a session on chairing a department.

In addition to Professors Shama and Stonely, CART is directed by a Steering Board, consisting of a small group of faculty and administrators, and an Advisory Board, a larger group which includes representatives from all divisions on campus. In a relatively short time (CART originated in January, 1992), the Center has established its identity on campus as a valuable resource for faculty development and the interchange of ideas.