PHOTO BY VERNON DOUCETTE

Machinists at BU's physics shop produce everything from test-tube holders to telescopes.

MACHINE DREAMS

BU'S MACHINE SHOP BUILDS, WELL, ANYTHING

HEITOR MOURATO loves the smell of a machine shop. The metallic bite of copper mingled with the pungent scent of scorched iron and motor oil somehow kicks his imagination into gear. "Some people like the smell of the ocean," he says. "I prefer steel and aluminum."

Mourato is the director of Boston University's Scientific Instrument Facility (SIF), a sprawling, 10,500-square-foot shop in the basement of the Physics Research Building. With its team of six expert machinists, the facility produces custom-machined parts and equipment required for research in physics, biology, chemistry, photonics, astronomy, and medicine.

In contrast to the quiet corridors on the floors above, the physics shop, as it is commonly called, positively hums. As the machinists work, wearing goggles and blue lab coats, a classic rock radio station plays the Doors or the Bee Gees over the constant thrum of the ventilation system. The din is outdone by frequent blasts from an air hose.

Established in 1987, the physics shop serves all departments on both BU campuses. Its cutting-edge equipment — machines that cut, saw, drill, grind, and lathe — rivals that of most commercial shops. Customer requests have ranged from plastic test-tube holders to the hardware for spacecraft telescopes.

Mourato's favorite project was a strange gadget commissioned by Sargent College researchers studying infant behavior. "I called it a baby kicker," he says. "There are two pedals attached to a mobile, and every time the baby kicks the pedals, the mobile spins and plays music."

Actually, Mourato is partial to any project that involves music. Recently, School of Management students working on a project asked him to design a soap canister that plays a tune every time someone pumps the dispenser. The music plays for about twenty seconds — the amount of time it takes to kill bacteria. The idea, he says, is to encourage children to wash their hands thoroughly.

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—Heitor Mourato

A big benefit of working with the SIF — its resourcefulness — brings about the staff's greatest challenge. Customers often come to Mourato's office with brilliant ideas, but few details. "Most of the time, they'll have vague sketches drawn on scrap paper," he says. "And it's our job to take that idea and make it into a viable piece of research equipment." Scientists engaged in new research need new and often undreamt-of machines, requiring "equipment that isn't found in any laboratory stockroom or catalog."

Welder and machinist Bob Kingsland is teaching a graduate course in designing and drafting. "If we expose students to the way a machine shop works," he says, "they'll learn how to manage their grant money more effectively and get the hardware they need for realistic prices."

VICKY WALTZ