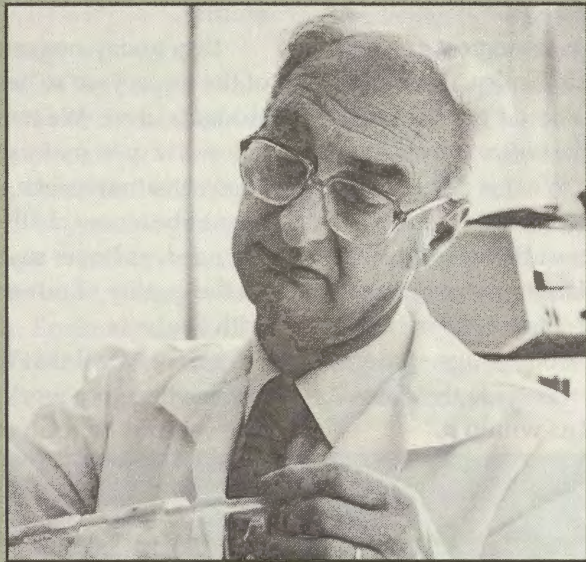


EXCELLENCE

Teaching ■ Research ■ Public Service



"I have always considered it a privilege to be a college professor. To see the growth and maturity that occurs between a student's freshman and senior years is for me a tremendous experience."

Richard Strout
Professor Emeritus of
Animal Science

Award Recipients

- 3 Howard Mayne**
Assistant Professor of Chemistry
Outstanding Faculty Award
and University Teaching
Excellence Award
- 5 Peggy Vagts**
Associate Professor of Music
University Teaching
Excellence Award
- 6 N. Dennis Chasteen**
Professor of Chemistry
University Research
Excellence Award
- 7 Joseph Durocher**
Associate Professor of
Business Administration
University Teaching
Excellence Award
- 9 David Watters**
Associate Professor of English
Outstanding Faculty Award
- 11 Alice Crow-Seidel**
Associate Professor of
Occupational Therapy
University Teaching
Excellence Award
- 12 Thomas Newkirk**
Associate Professor of English
University Teaching
Excellence Award
- 13 Patricia Bedker**
Assistant Professor of Animal and
Nutritional Science
University Teaching
Excellence Award
- 15 Karla Vogel**
Instructor of Computer Science
University Teaching
Excellence Award
- 16 William Wetzel**
Forbes Professor of
Business Administration
University Public Service
Excellence Award
- 18 Rochelle Lieber**
Associate Professor of English
University Teaching
Excellence Award
- 19 Richard Strout**
Professor Emeritus of
Animal Science
Distinguished Teacher Award

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The Responsibility of Serving as Role Models

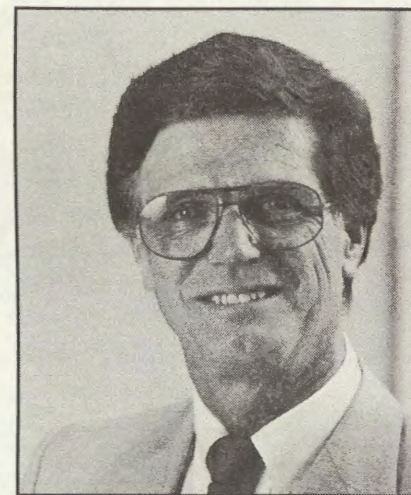
Excellence. It's a concept we embrace and treasure at the University of New Hampshire. In this publication, you will read about faculty members who have achieved excellence in teaching, in research, and in public service.

Routinely, we expect excellence from our faculty. But our expectations should extend throughout the entire university community. "What is needed," writes Carnegie Foundation President Ernest Boyer in a recent report, "is a larger, more integrative vision of community in higher education . . . College-age students certainly learn outside the classroom as well as within it."

What we should infer from Boyer is that the process of education is carried out by every UNH employee and student—in the classrooms and labs, and through the everyday performances of our work on campus and in the community.

Day to day, we can lose sight of the impact we're having on students' lives. We need to develop a way to maintain a heightened sensitivity; each student should be a new challenge to us. We need, as Boyer says, to focus on the quality of our encounters with students.

I deeply feel that those who are privileged to work on a college campus have an enormous responsibility to serve as role



models for students. It's a responsibility to be the best we can be, and I expect it from myself, I expect it from the faculty, the staff, the administration, the students, everyone.

Each of us has a job. We can just get by, or we can focus our minds and energies on performing our work in the most effective ways possible, and we can achieve excellence.

—Dale F. Nitzschke, President

"A Faculty of Active Learners"

Our faculty awards recognize individual achievement, but they also celebrate the special character of the University represented by the faculty as a whole. I find this faculty advocates an ideal of education that suits UNH especially well: the ideal of teaching as a sharing of learning between faculty and students.

We are a full-scale university of relatively small size, and this

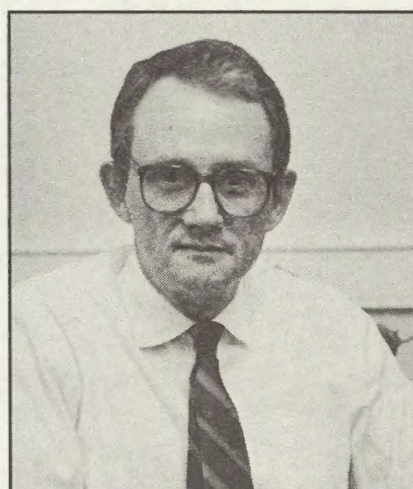
means, first, that faculty naturally cross boundaries and find students and colleagues in other departments and colleges. A sense of academic community is difficult to maintain as knowledge becomes more specialized. But this faculty has embraced the mission of general education, and some of our strongest programs of teaching and research are interdisciplinary in nature. Faculty who relate their special interests to the larger world of learning can engage their students in their own continuing discoveries.

Likewise, in more specialized courses, UNH faculty find ways to involve students directly in their own scholarship. This kind of teaching happens best, usually, in small classes, laboratories, and studios, where students and teachers can work together closely. But the indispensable element is a faculty of active learners.

Teaching and research go hand in hand when faculty share the activity of their own learning with their students. Public service is another element of our mission. We are distinctively New Hampshire's university, and so we endeavor to extend a community of learning throughout the state.

This is a faculty in which each member of the University community can take pride. I commend the special accomplishments of the award-winners on behalf of the faculty as a whole.

—Walter F. Eggers, Vice President for Academic Affairs



“Imagination is More Important Than Knowledge”

Howard and Debora Mayne's four-and-a-half-year-old daughter Victoria is as likely to plead for a screening of a Puccini opera as she is a videotape of Bambi. Small wonder. Her mother produces operas and is working to establish a company in the Seacoast. Her father performs in them.

In his wife's 1987 production of *Così fan Tutte*, Howard Mayne played Haydn. In her 1988 production of *The Marriage of Figaro*, he was Beaumarchais.

Never mind that until Howard Mayne wrote them in, Beaumarchais was *Figaro's* creator, not a character in the opera,

and that Haydn never appeared in *Così fan Tutte*, but only visited Mozart during rehearsal. Mayne invented and scripted the roles to smooth musical lurches, cover scene changes at venues with no backstage, and keep audiences engaged.

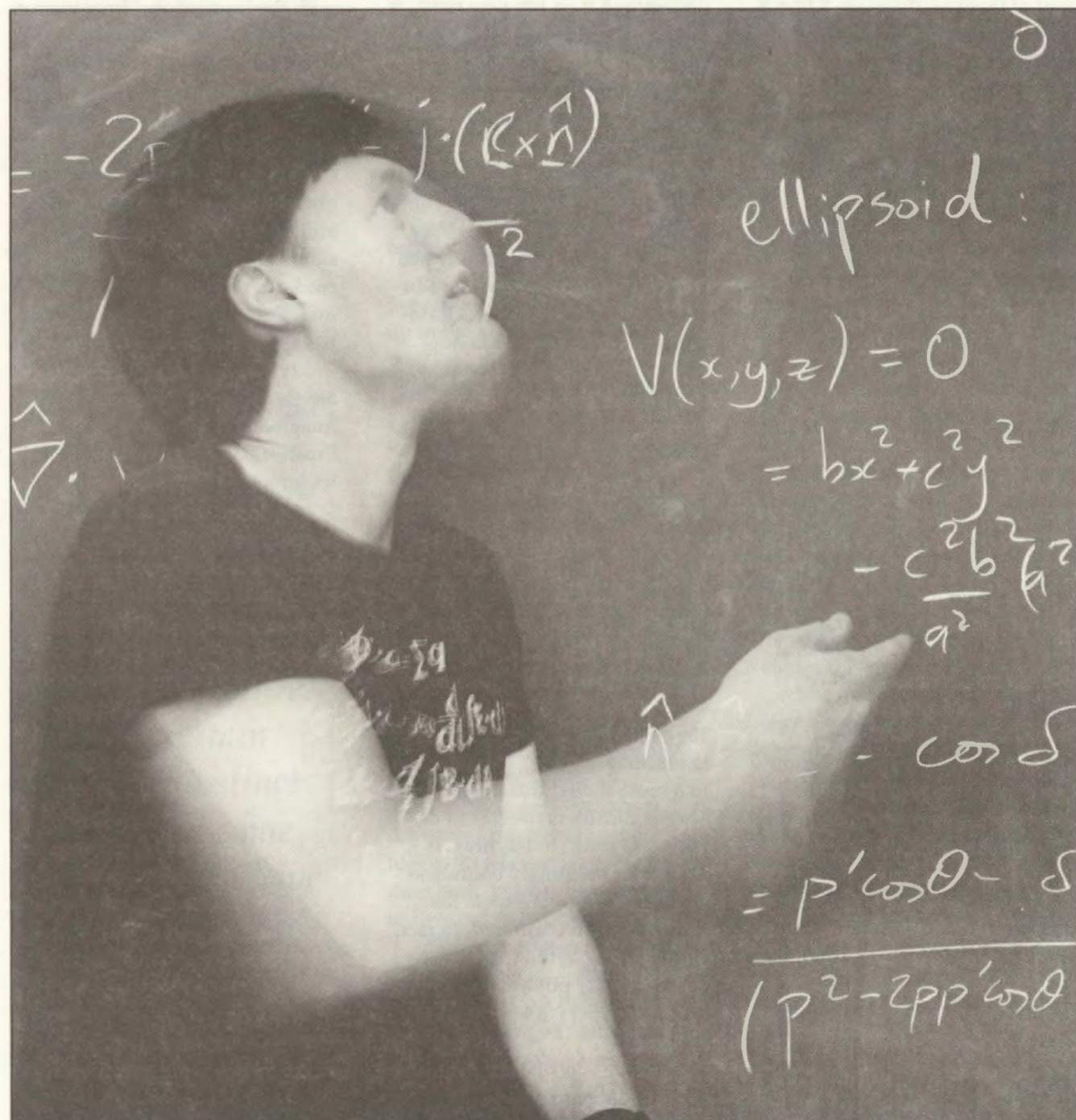
For someone who earned the distinction of “cabbage” at a tender age, Mayne seems to have an intuitive sense about what appeals to an audience. (Cabbages were one of two possible groups into which you were summarily divided at the boys' school in his native Leeds, England, says Mayne. Everyone was lined up and asked to sing. From then on,

you were either a rose or a cabbage, and cabbages were never again required to sing.)

Mayne's favorite role by far, and the one for which he draws a university salary, is operatic only in the sense that it's bigger than life. When he's not on stage, Mayne plays a lunatic chemistry professor to an audience sometimes astounded. Never bored.

“He has been known to sing opera in the hallway,” confirms Frank Pilar, chemistry department chair. He has also been known to dress up in wig, safety goggles, and a torn lab coat festooned with brightly colored molecule models. Yet far from heaving a parental

“He has been known to sing opera in the hallway,” confirms Frank Pilar, chemistry department chair. He has also been known to dress up in wig, safety goggles, and a torn lab coat festooned with brightly colored molecule models. He has an ability to turn what some view as a god-forsaken landscape of physical chemistry into The Adventures of Indiana Jones.



“Students hate me,” says Howard Mayne. “I put every formula they’ll ever need right in front of them on the exam.” The real test, he says, is knowing which questions to ask in the first place.

sigh, Pilar is openly envious of Mayne's ability to turn what some view as a godforsaken landscape of physical chemistry into *The Adventures of Indiana Jones*.

Or perhaps Mayne's character is more like the inspired Mozart of the film *Amadeus*, except that his costume is usually dungarees and a T-shirt. "I would wear a tie if I wanted to shock people." As for his chalkboard-side manner . . .

"Let me put it this way," offers Chris Bauer, a colleague who for many years has occupied the office abutting a classroom Mayne teaches in. "Howard is one of only two people I've ever been able to hear (through the wall). He has," Bauer adds with considerable understatement, "an occasionally demonstrative style."

It's not his fault. "One of the best ways to demonstrate the shape of a methane molecule is to stand like this," Mayne says, getting to his feet and assuming a pose that is part Atlas, part John Travolta. (Imagine he is a capital X twisted ninety degrees at the waist so the legs are in one plane and the arms in another.)

"My arms and legs are bonds to the hydrogen atoms," Mayne says with difficulty, his head tucked to his chest so as not to be mistaken for a stray atom. "This is the carbon atom," he says, indicating his torso. "CH₄. . . Get it?" If not completely, if not immediately, certainly unforgettably.

Disarm and make memorable, seems a fitting credo for Mayne. And if you were in one of his courses, you would take away this image and be able to think about it and put it to use. At the very least, you would be grateful that somebody had come along who cared enough to bring physical chemistry—as in "the physics of chemistry"—to life.

"The physics of chemistry"

"Molecules can't just sit there. They have to vibrate at least," says Mayne. "They sometimes rotate, too." He illustrates his point by shuffling a white, a blue, and a red plastic ball on the surface of his desk. Both movements influence how chemicals will react with each other when they collide, thus the emphasis on getting his students to think of molecules in three dimensions.

Using computer programs that allow them to follow the motion of individual atoms during a collision, Mayne and his graduate students have contradicted the conventional view that rotation decreases molecular reactivity. In fact, it increases it for a large class of reactions, says Mayne. His group also was first to show how rotation in one molecule can break bonds in another.

So far Mayne's research has focused on the complexities of simple three- and four-atom systems. He hopes eventually to tackle larger systems to find out what happens, for example, when certain mixtures of nitrogen and oxygen combine—a reaction partly responsible for depleting the earth's ozone layer.

"It's not memorizing formulas that's important"

"Students hate me. I put every formula they'll ever need right in front of them on the exam." It's not memorizing formulas that's important, Mayne contends.

"A working scientist always has books he can refer to." The real test is knowing which questions to ask in the first place so you can use the formulas you will undoubtedly need to look up.

Mayne's first experience as a working scientist came as a postdoctoral fellow at the Max Planck Institut für Strömungsforschung in West Germany. Later he would work as a research associate for Nobel Prize winning chemist John Polanyi in Toronto. It was from Polanyi that Mayne says he learned the importance of telling a story—even in a research paper—and choosing just the right word for a concept. For this reason, Mayne believes, much of the vocabulary modern physical chemists use can be traced to Polanyi.

But it was in Göttingen that Mayne learned from the example of the institute's renowned director, Peter Toennies, what commitment to students means. Even in a place where the excitement of doing "big science" was thick in the air and teaching might have been relegated to the background, Mayne says, Toennies would insist every graduate student who was to present a paper to the group go through it no less than three times with him or an

assistant beforehand. The amount of time Toennies devoted to his students has made a lasting impression.

"Howard is extremely perceptive about seeing just where your problem is in understanding something," says chemistry chair Pilar. "He is able to find where you are and speak to you at that level. I wish I could pull that off as well as he does."

Pilar adds, "He is able to sow the seeds of self-confidence. The world is full of people with potential that never gets developed. Howard is a catalyst." A mentor in the truest sense, he will drop everything to help a student, Pilar adds. "He is attentive to students almost to a fault."

Mary Kirchhoff would be hard pressed to find the fault. "Physical chemistry, in my book, is not interesting," says Kirchhoff. But it was essential for the thirty-five-year-old mother of four to understand it on her way to earning a Ph.D. in organic chemistry.

Kirchhoff had been out of school four years when she took the department's internal placement exam. As far as the physical chemistry portion went, "A chimpanzee would have done better," Kirchhoff jokes. She was advised to sit in on Mayne's undergraduate course for a refresher. Gravitating toward a need, Mayne ended up tutoring her for an hour or two each week.

"For someone to offer that kind of help when I wasn't one of his students or a member of his research group is just remarkable," Kirchhoff exclaims. "Before one exam he came in on the weekend to work with me." She earned a B+ in the course and a measure of self-esteem that seems tangible in her voice.

The cost of devoting so much to teaching

In a more thoughtful moment Mayne considers the cost of devoting so much to teaching. If not for his seemingly boundless energy, one would expect his research to have suffered. In fact, since coming to the University in 1985 he has published sixteen research papers in leading journals.

Mayne lays open a recent issue of *Chemical and Engineering*

News. An article tells of a group of researchers who have used supercomputers to verify in mathematically infinitesimal detail what Mayne has already suggested in cruder, but no less valid models. "We were out-gunned from the start," says Mayne with the apparent regret of someone on the outside of a party looking in.

Mayne understands the excitement of rushing to press with the same discovery a half-dozen labs in the world might be trying to make. "I suppose I still have this deep dark desire to win a Nobel Prize," he confesses.

"You don't get a Nobel Prize for teaching. But I suppose that's what I'm getting a reputation for. Ah . . . there. Now you've bared my soul."

The music of imagination

There's a poster of Albert Einstein in Howard Mayne's laboratory with the inscription: "Imagination is more important than knowledge." On the inside of Howard Mayne's office door, there is another picture of the great man caught for all time in a less reverent moment, sticking his tongue out at least at the photographer, and maybe at an entire world of staid convention. The caption reads, in part, "He who joyfully marches to music in rank and file has already earned my contempt."

If Howard Mayne marches to anything at all, it is the music of imagination and he, the Pied Piper of Parsons Hall, is leading the procession.

—Tad Ackman, writer/editor,
College of Engineering and
Physical Sciences



"I rarely demonstrate," says Peggy Vagts of her teaching style. "I want them to do it their own way, not just imitate the way I would play it."

"Teaching Performance is Like Coaching"

"I like a thinking player. You have to think about where you are in the music, in the statement or in the development. But you can focus too much on the individual notes and lose the big picture. There's a certain amount of instinct involved. At some point, you just have to play it."

The pitch is better here. I don't know if you were thinking about it or not."

The student nods, her flute held tentatively below her lips.

"Good. Keep your eyes moving ahead. Don't get too caught up in the notes. Just let it happen."

Peggy Vagts has a notebook in her lap. She conducts with one hand, occasionally singing along.

"I like a thinking player," Vagts says. "You have to think about where you are in the music, in the statement or in the development; about what kind of effect you need to settle a piece down at the end. But you can focus too much on the individual notes and lose the big picture. There's a certain amount of instinct involved. At some point you just have to play it."

Teaching performance is different from teaching theory or history to a larger class. Vagts does both, but her focus is on individual instruction.

"Performance is more like dance or athletics," she says. "It's very physical." A full-length mirror hangs in her office so students can watch how they

move with the music, or how their fingers fly off the keys.

"Teaching performance is like coaching," Vagts says. "I think about things long-term." She pictures her students in an orchestra or a chamber music group, having to master a new piece for the next performance. She sees them as teachers of the next generation and imagines the kind of students they will have. "I want them to have positive experiences in performance. I want to be sure they are well-rounded in the literature." She keeps a notebook on each student, recording the pieces they own, the pieces they have worked on, the techniques they have mastered.

She meets with each student once a week for a lesson and once a week in a studio class; more often when a recital is approaching. "You have to be more delicate," she says. "The student standing up alone with her instrument can't hide in the crowd, can't cover up a lack of preparation. People's feelings are involved. They're much more naked. Each week there is a reckoning."

Each week, and for years. "I get close to the students," Vagts

says. "I get to know their families because they come for recitals. I see the students every week for four years. I get invited to their weddings. Then they send pictures of their babies."

Vagts grows reflective; she knows she has a relationship with her students not many professors share. "By the time most students realize what they've learned in college, they're long gone. It's nice to see them again when they're twenty-six. They say, 'Now I know why you did such and such. I do it all the time in my teaching.'"

The teacher's teacher

A photo of one of Vagts's own teachers hangs over the piano in her room, a puckish face with a blue beret cocked over his white hair. The great Marcel Moyse came from France and settled in Brattleboro, Vermont. "He was my last teacher," Vagts says. "He was ninety-one when I started with him. He inspired me in a personal way—a life totally dedicated to music."

He also shaped her teaching. "Most teachers play for their students," she says. "He never did. He talked. He could describe a feeling. I remember him describing being a small boy, the church bells ringing on the mountains while he played a homemade flute to the sheep."

She laughs. "Well, he was very romantic, from that period of French romantic writing that is no longer in vogue. But it expanded my repertoire." And she decided to minimize playing for her own students. "I rarely demonstrate. I want them to do it their own way, not just imitate the way I would play it."

She perches on a high stool that brings her to the height of the standing student. One hand swims through the air. "This part is always in motion. You've got to sound like water." The student

looks uncertain. "Like water going downhill, not uphill." The student laughs.

Discovering women composers

Vagts's teaching has been reinforced by her research on women composers. The research began as a curiosity when she was in college in Sioux City, Iowa. An interesting idea, her teacher told her, but "there just aren't any."

He was wrong. Not only are there many women composers, Vagts discovered, there are many who have written for the flute—including New Hampshire's late Amy Beach, whom Vagts has helped become better known. Vagts is collecting the work of women composers in a handbook for flute players and teachers.

"Can you imagine a place called Flute World, in Michigan?" she asks. "I go there and buy anything written by a woman." She tries the music out, then assigns it to a student. The process is one of discovery for both student and teacher. "Some of the pieces are not so good. But then we find some that are really good.

"And it is interesting. I don't want to play the same ten pieces all my life." She imagines herself, at the age of Marcel Moyse, doddering through the aisles of Flute World, picking out pieces to try, something new to share with her students.

"Most of the women composers thought they were the only ones," Vagts says. "When my female students see all this work, there's a message there. They're not alone. They can do it, too."

Another student enters the room and begins to tune up to the piano. A poster on the wall reprises the state motto: "Tune It Or Die." The student begins to play.

"Too much diminuendo here," Vagts says. "Is that in the score?"

"Yes," says the student. "You wrote it in."

"Oh. Well, take it out. I've got you pinched there."

The student tries again, with more force, and the melody rises to a climax.

"Yeah, yeah, stand on your chair there! Once you hit that G, you've got all the time in the world."

—Richard W. Moore, writer/editor,
University Publications



Dennis Chasteen has scuba dived all over the world. Last spring break he went diving off Bonaire, an island near Venezuela.

arship to Murdoch University in Perth, Australia, to learn new spectroscopic techniques for his research.

The grant number on Chasteen's file at the NIH in Bethesda, Maryland, reveals yet another extraordinary fact. Eleven digits are followed by a dash and the number 18, which designates how many years the grant has run. Chasteen has had continual support from NIH ever since coming to UNH, despite the fact that the lion's share of a dwindling pool of dollars goes to support institutions with full-blown medical programs, says Morrison.

In addition to dedication, two things have contributed to the success of Chasteen's research program, according to Morrison. "Denny has built one of the best facilities for electron spin resonance in the country; people come from all over to work here."

And, Morrison adds, while many researchers set artificial limits on the techniques they will use within their discipline, "Chasteen did a clever thing. He limited the scope of the problem set and broadened the skills he would apply to it. He appropriates whatever tools are necessary from the entire discipline."

His more than seventy articles and book chapters on a range of topics appear in a variety

The Power of Curiosity

The first hint that Dennis Chasteen would be a scientist came when he accidentally burned a small crater in his mother's kitchen table. He was experimenting with a chemistry set his parents had given him. Chasteen doesn't remember the aim of the experiment, but the muse that inspired it has never abandoned him.

"You don't go into science because you're interested in raising society's standard of living," Chasteen says. "Scientists are curious and wonder why things are the way they are." Curiosity eventually lured Chasteen away from his hometown, Flint, Michigan, where his mother worked in a factory making window cranks and door handles for GM cars while his father ran Chasteen Air Conditioning and Appliance in Ann Arbor.

"The local junior college got us started," Chasteen says of himself; an older sister, now an executive secretary in Wisconsin; and a younger brother who is associate dean of clinical dentistry at the University of Washington. For the middle Chasteen, the junior college transformed an interest in high school teaching into an interest in college-level teaching.

A similar evolution occurred at each step of his continuing education. By the time he had earned his bachelor's degree at the University of Michigan and his master's and doctorate degrees at the University of Illinois, Chasteen was certain that doing research at a university was the obvious next step.

Now in the prime of a career that spans twenty years—seventeen of them at the University of New Hampshire—the forty-eight-year-old is described by colleagues variously as quiet, aggressive, independent, collaborative, honest, creative, shy, dedicated, and an excellent teacher. Without fail, they also acknowledge him as one of the University's finest researchers—"world class" in the words of a chemical engineering colleague.

Chasteen recently was chair for two years of the National Institutes for Health (NIH) study section responsible for evaluating some 250 research proposals a year from metallochemists across the nation. Being chosen for the post ranks Chasteen among the best in his field, according to James Morrison, chemist and former vice president for research at UNH. After serving two years as chair in addition to his regular University duties, Chasteen won a Fulbright Senior Research Schol-

"I think it's important to recognize that in an academic setting, research itself is a form of teaching. When students leave, they have a set of skills to attack a problem, to ask the right questions."

of publications, including the *McGraw-Hill Yearbook of Science and Technology* (1988) and the *Journal of Chemical Education* ("Chemistry and the Sea: A Course for Non-Scientists"). Yet most of his work, like that supported by the current five-year \$1.2 million NIH grant renewal, has been pursuing the secrets of two key proteins that make life possible.

A visitor's knock brings Dennis Chasteen to the front door of the rustic salt-box home he built in Lee. The house sits next to a brook on twelve wooded acres. It is serene, a place ideal for contemplation and reading—both of which make up a large part of Chasteen's daily routine.

He opens the wood-and-stained-glass door which, like five others in the house, and the stairway's walnut balusters, he rescued from a salvage operation in Massachusetts.

A pot simmers on the stove, filling the cool morning air with the smell of a turkey soup Chasteen is making for himself and his daughter, Stephanie, a senior at Oyster River High School. On the living room floor next to the couch are two ancient scuba diving regulators awaiting repair. The dive shops have told him to give up looking for parts; Chasteen thinks he can fashion the small rubber diaphragm he hopes will fix one of them.

With much of his work in the abstract realms of reading, writing, and research, "It's a great relief to do things with my hands," Chasteen says. That explains the electrified bird feeder he built to ward off marauding squirrels, and an insulated "doggie door" he installed in the living room. Chasteen doesn't have a dog. The door is for loading firewood in the winter with minimum heat-loss.

Although it is summer, Chasteen splits his time between working at the University and at home where he reviews and evaluates up to half a dozen manuscripts and proposals each week from organizations like NIH, the U.S. Department of Agriculture, and the National Science Foundation. Occasionally he receives requests from agencies in Canada, Great Britain, and Australia. At the campus level he has served on

the Biomedical Research Support Grant advisory committee and is a mentor for colleagues looking to submit research proposals to national agencies.

Chasteen's research has centered on ferritin and transferrin, two proteins with unique biological capabilities. "Transferrin takes iron from the gut and transports it through the blood to tissues that need it," he explains, adding that virtually all cells in the body require iron. There is also an iron-storage protein called ferritin. When iron is not needed by cells, ferritin acts as a waystation where the body can store large amounts of it, Chasteen says.

Through some chemical sleight of hand, transferrin is able to latch onto iron, transport it to where it's needed, and then release it unaltered. And for iron to enter and exit the ferritin storage molecule, the iron must change its oxidation state—a process involving transfer of electrons. "It is a highly complex phenomenon," says Chasteen. His goal is to describe precisely how all this happens at the molecular level.

"From the practical point of view, work like this could pay off in drug therapies for diseases of iron metabolism," Chasteen says, some of which are fatal. But practical applications, while they may supply insight into the eventual significance of his work to the general public, are not what motivates Chasteen.

"Why does iron (III) form inside ferritin as an iron oxide mineral? Why not outside in the cellular soup? What is it about the protein that dictates a particular crystalline structure as opposed to some other form of iron?" These are questions Chasteen pursues with the help of a full-time research technician, a postdoctoral research associate, and five graduate students.

While the grants he receives allow him to reduce his classroom teaching, Chasteen has fulfilled his high school wish to teach chemistry in another way. "I think it's important to recognize that in an academic setting, research itself is a form of teaching. I get a true sense of satisfaction when a graduate student starts in my

group rough around the edges and four or five years later can write an accomplished dissertation. When they leave, they have a set of skills to attack a problem, to ask the right questions. That's the gift you've given when they complete their graduate degree."

It is a gift Chasteen bestows, not in a classroom of thirty, but one-on-one in perhaps the only way possible, by example and

collaboration. At the graduate level, he explains, students are learning the scientific method by doing science and, at the same time, are generating new knowledge. They are learning how to harness the energy that pulls Chasteen forward in his own quest for knowledge. Curiosity.

—Tad Ackman, writer/editor,
College of Engineering and
Physical Sciences

Marketing the Business of Hospitality

Joseph Durocher can't seem to keep his mind off food. Whether it's teaching his advanced food and beverage management class, writing his semi-weekly column for *Restaurant Business*, planning a literacy program for food-service trainees, lunching with wife Regina in Paris, or dining at home, Durocher gives new meaning to the phrase "food for thought."

Durocher's ideas have themes such as improved efficiency, lower costs, original solutions, and enhanced training. His research specializations share common themes of food, technology, and the future.

"I'm futuristic in my thinking for automation and robotics in fast food and hotel management," says Durocher. "We can't continue to have people supplying services that can be automated—we need those people to serve society in other ways."

The fast food industry, for example, is undergoing a midlife crisis, with high labor costs and turnover rates aggravating an inability to adjust its image problem to the demands of the times. Further, attempts to change food to be all things to all people have eroded the business.

"There's been a shakeout in the fast food business because when it began it made some promises to the American public," says Durocher. "It was supposed to be fast and inexpensive and offer a limited menu that could stand relatively long holding

periods. The fast food organizations have broken their promises."

Durocher surveyed fast food restaurants in New York City and found the average amount of time a customer waited to be served was twelve minutes. He believes automation is needed to pick up the pace, because in the world of fast food, he says, that's just too slow.

A hotel to call home

Durocher grew up in an elegant, turn-of-the-century hotel in North Woodstock, where running the establishment was a family affair. "That's where it all began," says Durocher. "Cousins, aunts, uncles, you name it, we were all involved with the hotel's management."

His food management skills materialized while he was an undergraduate student studying economics at Columbia University. Durocher explains how he and his roommate were frustrated that no deli existed on campus. Armed with a little knowledge of supply and demand, Durocher's first business venture in food-service management became a success story.

"We were tired of walking off campus at 11:45 every night for a snack, and reasoned, if we felt that way, then other students did, too," Durocher says. "There was nothing in the basement of John Jay Hall, and we convinced the campus food-service manager that we knew what we were doing."

Twenty years later, the deli is thriving, as is a hotel management

"I'm futuristic in my thinking for automation and robotics in fast food and hotel management. We can't continue to have people supplying services that can be automated—we need those people to serve society in other ways."

program Durocher went on to establish at New York University. Creating food and hotel ventures—incorporating both research and service—are Durocher's hobby.

Once a bachelor

After graduating from Columbia, Durocher enrolled at Cornell University to begin work on a master's degree in hotel management. What he didn't plan on was earning another bachelor's degree in the process. Cornell administrators didn't think an economics degree to be ample preparation for hotel management, so Durocher had to begin again.

Durocher spent ten years at Cornell, and graduated with a bachelor's, then a master's, and finally a doctorate in hotel management in 1980.

In retrospect, Durocher doesn't begrudge having to earn two bachelor's degrees. In fact, he's an advocate of hotel students having a solid business grounding in accounting, management, manufacturing, product development, and, yes, economics, before entering the hospitality specialization.

"Our students take all the business courses and then all the hotel courses on top of that," he says. "That way they are prepared for whatever business opportunity comes their way."

Heading south to Manhattan, and a position as associate professor at New York University, Durocher realized there was something missing from the New York metropolitan hotel market: homespun hotel managers.

"With 96,000 hotel rooms in New York, hotel managers had to be imported to meet the demand," says Durocher. "NYU didn't have a hotel program at the time, and those new managers coming in from pastoral settings such as Cornell were having a difficult time adjusting to the city life. Often they left after only a few months. I started a program that placed students in these hotels as interns, allowing them to grow accustomed to the city before they began working in it."

Real world 101

He joined UNH and the Whittemore School of Business and Economics

hotel administration program in 1986; he's since made a habit of exposing his students early and often to the real world of hotel and food management.

"This program is as dynamic as the industry the students will enter," says Durocher, who adds that hotel students may complete two internships during their UNH tenure. "The new courses we have added reflect growth in the industry."

Durocher's influence has added to the hotel management program's reputation for specifics by introducing courses that zero in on the particulars of owning, managing, or marketing hospitality properties.

Students appreciate Durocher's efforts to acquaint them with the working world. Says Leanne Page, a May graduate of the program, "Joe is constantly challenging his students to learn by other methods besides books and lectures."

It's not unusual for Durocher's students to find themselves commuting to Boston to work in the downtown Sheraton Hotel and Towers during their senior year. Annual theme dinners put students' knowledge of back-of-the-house and front-of-the-house to the test, and courses such as restaurant design attempt to duplicate problems they may encounter on the job.

Durocher recently created the design course so students could not only determine what they want to achieve in the design of establishments they own or manage, but also learn how to articulate those preferences to interior designers and bankers.

The course's text, *Successful Restaurant Design*, was coauthored by Durocher and his wife, Regina Baraban. He explains that the project joined their specific interests in restaurant management and, using original case studies, took nearly three years to develop.

"He puts time and thought into each class and really cares



"Our students take all the business courses and then all the hotel courses on top of that," says Joseph Durocher. "That way they are prepared for whatever business opportunity comes their way."

about this hotel program," says former student Karen Nye. "I have seen him work for students and try to make this a better program. I have had no other professor at this University who has impressed me or who I respect more than Dr. Durocher."

Under Durocher's guidance, the hotel program now boasts a partnership agreement with the New England Center, a conference and dining facility located on the Durham campus. Students serve internships assisting department managers in both back- and front-of-the-house operations.

"The students don't replace anyone; rather, they do things that should be done in an ongoing organization but for some reason are not," says Durocher, adding that thirteen students will be assigned to the New England Center this fall. "One student last semester, for example, installed computer programs that have been long in demand."

His most recent brainchild is a work readiness program for entry-level food production workers. Durocher's goal was to reduce rates of illiteracy in the workplace by combining basic food-service training with reading and writing skills.

"Learning to read, write, and handle math problems has more immediacy when combined with a work training program—trainees see the need for these skills right away," says Durocher, who begins fund raising for the project this fall in Washington, D.C. The six-week training program has been endorsed by the hotel and food-service industries as well as the Office of the Mayor of Chicago, Durocher's pilot site. It was not coincidental that a building adjacent to a Chicago homeless shelter was chosen to house the program, Durocher says. The homeless are a population Durocher wishes to target with his program, and help feed with food prepared by trainees.

"Everyone wins with this one," he says.

—Carolyn Boulger, writer/editor,
University News Bureau

Renewing Our View of Tradition

As you might expect from a professor in the English department, David Watters's office is crammed with books. In places, bookcases stand atop other bookcases and nearly reach the ceiling. Books are stacked on tables and chairs, and he has to move a pile so a visitor can sit and talk.

However, in the middle of all these volumes, on the edge of Watters's desk, there is a simple, hand-made basket. Turning it in his hands, he illustrates a fundamental theme of American history. "This was made recently by Newt Washburn, a folk artist from Bethlehem, New Hampshire. The star pattern on the bottom came from the European side of his family, basketmakers for hundreds of years, who always signed their work this way. Inside, there is a different pattern that came from the Native American side of his family. By blending the traditions, he has made a stronger basket than is possible with each tradition alone."

For Watters, our understanding of who we are and where we came from is gained as much by studying objects from everyday life as by studying the "high arts." His ability to see America's culture in its handwork began with graduate studies at Brown University, where his favorite professors showed him that gravestones, needlework, and architecture are as valuable as literature in learning how people find meaning in their lives.

In the introduction to *With Bodilie Eyes*, Watters's book on early American gravestones, he writes, "It was a peculiar twentieth-century bias to presume that folk cultures are incapable of treating sophisticated and abstract ideas in their art and oral tradition By analyzing gravestones as well as printed matter, we are freed from an exclusively literate perspective."

It is not surprising to learn, then, that Watters's students—even those in introductory literature classes—find themselves not only reading Nathaniel Hawthorne

and Elizabeth Bishop, but also attending Vietnamese folk dances, French-Canadian fiddle contests, Black South African theater, and Native American powwows.

A fondness for learning

Watters says he became a teacher partly because of the pleasure he got from his own early education. "I remember learning to read in the first grade—those moments of recognizing words, then realizing I could read a book by myself and that there was a whole world out there I could know." This fondness for learning carried Watters through a college education and into his first teaching job.

"I was working as a carpenter in northern Vermont in the summer after college. There was a school for problem kids nearby that combined academics with hands-on work. They had an opening on the faculty and I was hired to teach Spanish and history—along with carpentry. I loved teaching! I loved being in the classroom helping students. That did it."

This mixture of traditional schoolwork with carpentry is echoed in Watters's current delight in taking his students out of the classroom to explore handcrafts and ethnic arts. "There is a change in the feel of the class when we're in the field. For one thing, the students have a chance to see me as a learner, not just as an authority figure. It's good for them to see me get excited about something new, something I don't know much about yet.

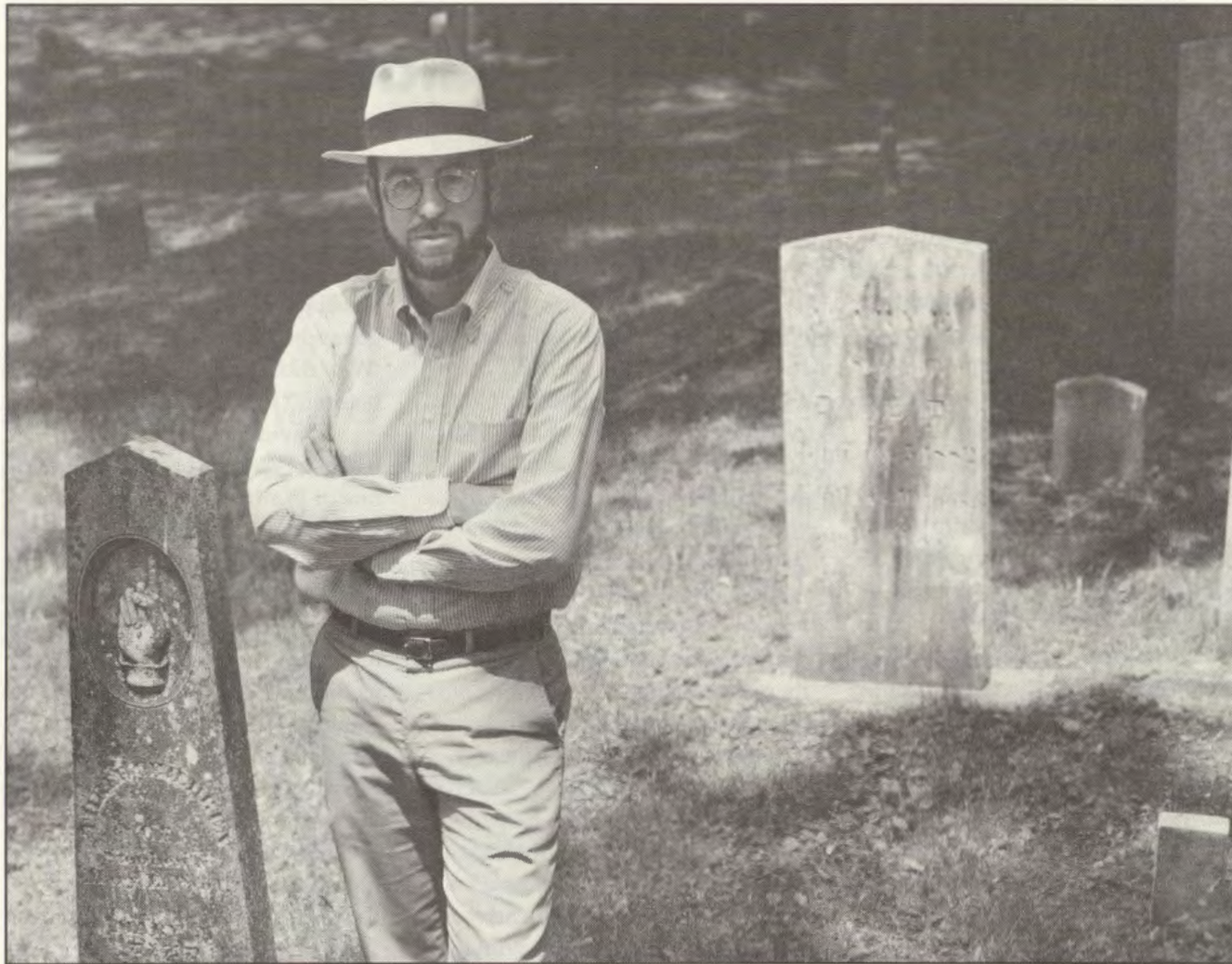
"But what's more important is the shock of recognition when a student discovers the value of his or her own heritage in something we see. For instance, we watched a doll-making demonstration by a woodcarver named Robert Richardson. Afterward, a student came up to me and said, 'My grandfather used to carve dolls like that but I didn't know they were anything special!' It's not uncommon for a student to telephone home after one of our field trips and begin an oral history project on some aspect of his or

her family. This is especially true of those New Hampshire students who have French-Canadian or possibly Native American backgrounds. They often say to me, 'Why didn't I know about all this before?'"

"David is a very human teacher," says Diane McAnaney, one of Watters's former students who is now a member of the English department faculty. "He was always willing to share his books and papers with us, always able to share his mistakes as well as his accomplishments. Everything he wrote in the margins of our term papers was a springboard to something else. He gave me a strong sense of who I am."

Watters has looked long and hard at his own New England roots that go back to the earliest English settlers. In the process, he

"It's interesting to be a scholar in this part of the country because there is a memory in these New Hampshire towns and families that often goes back six or seven generations. You can't find this kind of source in statistics or scholarly field research. People here take a great deal of pride in their ancestors."



For David Watters the study of gravestones, needlework, and architecture is as valuable as the study of literature in learning how people find meaning in their lives.

has developed an appreciation for diverse cultures that not only applies to historical times but to the present as well. His conversation is filled with an enthusiastic appreciation of the contributions women and minorities have made to our society. He is clearly determined to broaden the scope of his teaching and research to include their insights as well.

This interest was fired by an incident from his own family history. While researching King Philip's War, he recognized the name of an ancestor—Shadrach Hapgood—in an account of a bloody 1676 skirmish between Native Americans and English settlers. It led him to question what he terms, "my responsibility toward that event. Up until that time, my teaching of American literature had excluded Native American material. But it is as much a part of our culture as the writings of the European settlers. Now, my students read *The Spirit of the New England Tribes* or a sermon by Samson Occom as part of their class assignments."

Including our ethnic populations

Watters worries that this broadening of the curriculum will not be enough to meet the needs of an

increasingly diverse student body. To learn more, he recently joined a group of UNH faculty members and admissions officers who visited the Cultural Awareness Club at Nashua High School. The club is made up primarily of African-American, Asian-American, and Hispanic students. The UNH group was there because the University—predominantly white in its faculty and student makeup—is increasingly interested in knowing how best to serve the state and region's growing ethnic population.

"The first thing they asked," Watters says, "was 'Why isn't there more about people like us in our schoolbooks? Why is there only a little bit here and there, not whole textbooks or whole courses?' That was important for us to hear.

"The best of these students are being heavily recruited by Harvard, Yale, other major schools. But they are New Hampshire kids and we want their University to be attractive to them as well. There will be an exhibition of photographs of jazz greats at UNH this fall, as well as an African-American speakers series. We plan to invite minority high school students to attend these events to begin building a

relationship that eventually may lead to their applying here."

Learning from community scholars

Watters's work also takes him out into the state's towns and cities for another purpose. While his research papers are sprinkled with words like "eschatological," "hermeneutical," and "normative," he is equally at ease shedding his scholarly mien and traveling the length and breadth of New Hampshire to visit historical societies and library groups—as many as twenty a year—for down-to-earth explanations of New England culture. Most of the lectures are sponsored by the New Hampshire Humanities Council.

"Usually these sessions are a two-way street. I learn as much from the local historians—I call them community scholars—as they learn from me. When I talk about gravestones there are always people who know where the oldest ones in town are, where the first settlers are buried, or where Native Americans or slaves lie. Often there are ghost stories or macabre tales like the one about a spring so rainy that freshly dug graves filled with water and the

coffins had to be drilled full of holes and sunk!

"It's interesting to be a scholar in this part of the country because there is a memory in these New Hampshire towns and families that often goes back six or seven generations. You can't find this kind of source in statistics or scholarly field research. People here take a great deal of pride in their ancestors."

The importance of service to the University

Watters sees community service as important within the University as well. For the past two years he has served on the budget and planning committee of the Academic Senate. According to the committee's chairperson, biochemistry professor Donald M. Green, "UNH had really serious problems last year because of the state's financial situation. That our committee had an important say in how the University handled the budget crisis was due, in considerable measure, to David's ability to understand complex problems, offer creative solutions, and deal effectively with people."

Of the budgeting process, Watters says, "Our goal has been to maintain academic excellence—to protect the classroom and protect research.

"It is important that we don't lose ground. Since the 1960s, UNH has been transforming itself into a true university. Now we are able to compete with the Harvards and Yales for excellent faculty."

Twenty minutes of conversation with Watters can take the listener from seventeenth-century Puritan villages to today's legislative budget hearing, from gravestones to scholarly journals, from undergraduates in the classroom to community scholars in small towns. Like the basketmaker he admires, Watters weaves many different patterns into something new and useful.

—Drew Sanborn, editor, alumni publications

“What Gives Life Meaning Is Where You Begin”

Occupational therapy is looking at the whole person,” says junior Nancy Gordon. “That’s what Alice told us again and again.” She is talking about Alice Crow-Seidel, associate professor of occupational therapy (OT).

“Alice doesn’t just lecture. She’s the type of teacher who wants to make sure you can apply what you learn,” says Gordon. “One day she brought in cooking utensils and gave us a quiz on them. She said, ‘Cooking is a universal procedure, so what are these utensils?’ One of them was a garlic press and I didn’t know what that was. But she pointed out that if someone was Italian, a garlic press might be very important. Finding out what gives life meaning to a client is where you begin.”

“Alice is very straightforward,” says Erin Sharkey, a senior in OT. “She’s a professional, but she has a sense of humor. She’s a good storyteller. In her classes there’s an underlying theme or moral. I’m not saying that it’s something you’re graded or tested on. But

with each class it’s a challenge to find the key.

“As sophomores, everyone felt a little awkward with disabilities. There was almost a reverent respect: Should I help out? But as Alice would point out to us: ‘You’re not any different. Put it in your framework.’ One man who came to our class was an amputee. He had lost both his arms below the elbow. He still works and goes scuba diving. It’s kind of a miracle. And sure, not every client is going to be that successful, but working in this field you learn that miracle stories are not one in a million.”

“She likes playing medical detective”

Denise Hayes recently graduated with a bachelor of science degree in OT and has begun her fieldwork at Portsmouth Regional Hospital’s acute care unit. “Alice? She’s my mentor. I liked her instantly. One time she talked about how she could just watch people in an airport and be fascinated thinking about who they might be. She likes playing medical detective, investigating dis-

eases, finding out what the problems are. I do, too. We could also share kid stories. Here she is a professor, an OT, and a mom, and she juggles all those different roles. I could relate.”

She recalls one of Crow-Seidel’s labs in which she was blindfolded for two hours and cooked breakfast with someone assisting her. “I didn’t realize it, but my head was down. I felt very closed in and I was hunched over. I was also more quiet because I was unsure of my environment. I was just trying to figure out where the table was. It’s funny, but you don’t always think about those physical clues to how someone else is feeling. When someone feels confident, their head is up. They’re standing erect.”

Erin Sharkey assisted a student who was “blind.” She recalls, “When you’re missing a sense you’re really dependent on the other person’s directions. To be an OT you have to learn how to communicate, really break down the task. If you tell someone to move a fry pan two inches to the left, if that’s inaccurate, it’s potentially dangerous. It wasn’t working with disabilities so much as enhancing someone else’s abilities. Learning those communication skills are basic to occupational therapy. I guess that’s really what Alice was teaching us in that class.”

Alice Crow-Seidel’s office is just down the hall from a room that has photographs of graduating OTs. Each class has about thirty students, most of them women. Recent graduates dress more formally than the graduates in 1979, but each group has a winning sense of camaraderie. They’ve done a lot of work together.

OT students learn about anatomy, adaptive equipment, neuro-development, and ways to measure range of motion; it is a very technical field. OT is also a field that requires a high degree of emotional sensitivity. Crow-Seidel’s office is a place where students stop by to talk. They do that because talking with her is an adventure and they learn a lot. It’s obvious from Crow-Seidel’s open, expressive face, that she enjoys this kind of conversation.

“When I graduated from college my parents asked me

“I wanted to do more. I wanted to change society’s attitudes toward physically disabled people. I wanted to get them new homes that were accessible so that they could get around in wheelchairs.”



“One of the things I try to do when I work with students,” explains Alice Crow-Seidel, “is to give them a strong foundation so that they won’t lose their idealism when they go into practice.”

‘What’s occupational therapy?’ And I couldn’t answer them. Serious. I really couldn’t. I don’t think I knew until I had worked for about four years.

“I always worked in big teaching hospitals. The range of people I worked with was incredible—young, old, black, white, rich, poor. I worked in, oh, sort of the ‘St. Elsewhere’s’ of the world.

“My students often ask me why I left working as an OT. And I remember the day. I had worked on a unit for the severely burned for a year. One day I came off the unit and I just knew that I wasn’t going to particularly improve the quality of life for many of the people I was working with. The work was personally challenging, but in another sense it was depressing and overwhelming. I wanted to do more. I wanted to change society’s attitudes toward physically disabled people. I wanted to get them new homes that were accessible so that they could get around in wheelchairs.

“I had a chance to try teaching for a year. It was career development in a way. It was more uplifting—something I could see a future in.

“One of the things I try to do when I work with students is to give them a strong foundation so that they won’t lose their idealism when they go into practice. They are going to be confronted with some tough institutional situations where they’re not going to be able to do everything they set out to do with a client. And, eventually, they will have to come to grips with —‘I’ve done all that I can do as an occupational therapist.’”

“Students now are concerned about social issues”

“These students will have to make decisions about how they want to be invested both as individuals and as professionals in the communities in which they live and work. Students now are getting back to being concerned about social issues.”

On the last day of her course, the Meaning of Human Occupation, Crow-Seidel writes an outline of the basic theories on the blackboard. This class will be a comprehensive review before the final exam. At eight o’clock in the morning, these sophomores are a

bit sluggish. Preparing for finals is hard work. In this review session questions come up that express the students’ anxiety not only about the upcoming test, but also about the profession in general.

“Last summer I worked with a little boy who was severely brain damaged. I was supposed to come up with a treatment plan, but he couldn’t do anything. What was I supposed to do?” asks a student.

“Accept it,” says Crow-Seidel. “Maybe your treatment plan should be for the client’s family and caretakers. How can they interact or participate in caring for this person in a way that’s meaningful to them?”

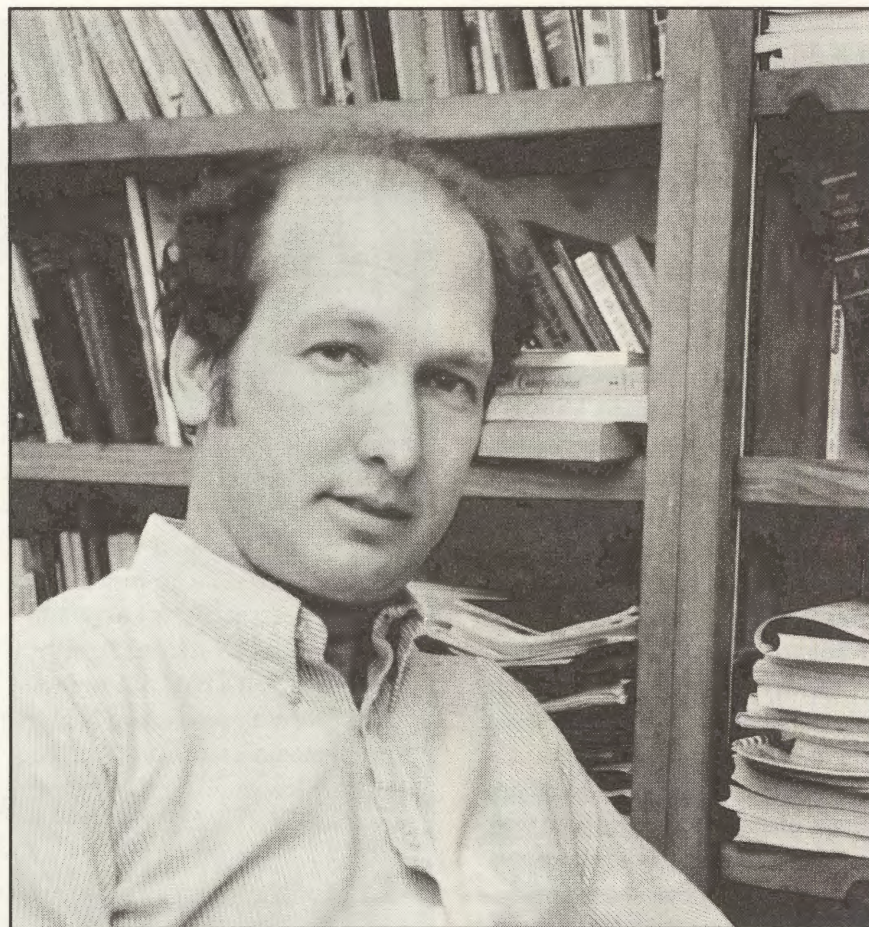
Crow-Seidel brings her expertise about learning to her classroom. Currently, she’s working toward her Ed.D. degree.

“One thing that can make learning difficult is feeling that we always have to be competent. One of the first things necessary to learning is being able to explore the environment and not feel that you must live up to anybody’s standards. In an academic setting, that can be difficult, because students are very concerned about grades. OT students are bright, high achievers. Getting them to step back from, say, a lab exercise to ask ‘What did I learn by doing this?’ can be hard.

“I like teaching because it is one way for me to have an effect on the profession. Many of the rewards in teaching, unlike therapy, come much later. Usually when students have graduated.”

Recently Crow-Seidel received a letter from Laurie Owen who now works in a pediatric rehabilitation facility in New York. Owen had learned, with some difficulty and resistance, how to sew a quilt square in an OT lab. Enclosed with her letter is a photograph of a “folded star” quilt she’d made over the course of a year. The letter begins: “As I wait, in anticipation of the arrival of my first student, I look back and see how far I have come since my early years in college. I never thought I would make it. You pushed me and gave me the confidence that I needed to get through.”

—Carrie Sherman, writer/editor, University Publications



The Dynamics of Listening

Tom Newkirk had just graduated from Oberlin College with a degree in religion and a certificate in teaching, and had taken a job at Boston Trade School in Roxbury, Massachusetts. The school was not known for its academic successes—the drop-out rate was high and discipline was a problem. It was violent, in fact, and the chaos was the worst part of working there. Forget about the books. They were tattered, outdated, and boring. The kids couldn’t care less about their texts.

Newkirk, desperate for suggestions and on the verge of quitting, called his father, a college professor of etymology. Newkirk didn’t want to begin his teaching career by forcing dull books, which he knew would not be opened, onto his students. His father said, “Well, what will they read?” For Newkirk, that was the perfect response.

The next day, he went to the corner drug store and with his own money bought out the entire stock of *Sports Illustrated* magazines. With magazines up to his chin, novice teacher Newkirk

made his way out of the store, up the street, past staring faces, and finally into his classroom.

“They liked it. Didn’t mean I was a success for life, but they read,” says Newkirk. He stayed at Boston Trade for the next three years, first to prove to himself he could do it, and then because he grew attached to the job and his students. Newkirk says he often read aloud to them. For writing assignments, he asked them to tell about times when they were in danger or afraid, which he says was often for most of them.

While teaching at Boston Trade, which Newkirk calls the hardest job he’s ever had, he earned a master’s degree in English education at Boston State College. Newkirk left Boston to attend the University of Texas where he earned a Ph.D. in teaching writing. While at Texas, Newkirk was awarded a fellowship to visit thirty schools in England to study their styles of teaching and learning writing.

Newkirk always knew he’d be a teacher. He never thought seriously of doing anything else. Not only was his father a teacher,

Tom Newkirk is currently writing a book about first- and second-graders learning to read. His working titles: *Booktalk* and *I Don't Think the Tooth Fairy Writes Cursive*.

"It's important for students to feel the pleasure of work, for them to have the sense that it's fun to be immersed in a project—those times you lose track of time completely. It can be a great privilege to experience moments where work and fun are merged."

but his mother taught high school English—and there were always teachers around.

People who teach generally like to work with people and love to talk, says Newkirk, whose own approach to teaching came slowly and deliberately. After a few years of exploring and trying out alternatives, he says he has happily settled on a style that is based partly on teaching philosophy and partly on personal style. For Newkirk—former coordinator of the University's freshman composition course, designer and teacher of doctoral programs, director of writing conferences, and author—teaching isn't always a matter of, well, teaching. Listening is a big part of what Newkirk does.

"One of the things that always strikes me is how important it is for someone to just sit and listen," Newkirk says. "A lot

of times, a student will come in and just talk for fifteen or twenty minutes straight. It's a circuitous way to resolve things, but talking it out works most of the time. I think we need space to think through problems."

A student-focused classroom

Newkirk says he has had rousing, intense teachers in the past whom he has appreciated, but taking center stage is just not his style.

"Sometimes I wish I could be more dynamic, but I realize that's just not the way I do things. It took me a long time to figure that out," Newkirk says he prefers a student-focused classroom and that he attains this by constant self-monitoring. He said first he had to learn to shut up.

"I think one of the first steps for me was to monitor how much I was talking. Then I shifted my vision from how well am I doing as the teacher to what or how well the students are doing. Sometimes I'll notice I am taking too many turns, and it's time to shift my gaze to the students."

This year, Newkirk is on sabbatical to finish writing a book about first and second graders talking about what they read, and how central the role of humor is in making not only their reading but their play and relationships work. Newkirk has two working titles; *Booktalk* and *I Don't Think the Tooth Fairy Writes Cursive* (an actual kid-quote overheard by Newkirk).

In addition to bookwriting, Newkirk, who has three children aged six, nine, and twelve, will be primarily responsible for child-care and chauffeuring, while his wife uses the year to work as a teaching intern. Despite a relatively busy household, Newkirk says he's not worried about interruptions while at home. He doesn't write for long periods of time anyway, paces himself, and has never suffered from writer's block.

"I've never been unable to write. I want to make it perfectly clear that sometimes I write terribly, but I write nonetheless," he says.

A growing interest in writing

Newkirk is excited about what appears to be a growing interest in writing in elementary schools

across the country. He says the interest has been generated by the teachers themselves.

"Most school instruction is routine, deadening," Newkirk says of conventional classroom lessons. "Teachers are slowly losing interest in skill and drill teaching. They want language instruction to be more than spelling lists and worksheets. The interest is coming from the teachers."

And Newkirk is grateful to be a part of the emerging interest and curiosity about writing at all levels. In the past few years, he has helped create a Ph.D. program in reading and writing instruction and continues to head up UNH's Annual Conference for Teachers and School Leaders on Teaching Writing. Inspired by, and in collaboration with, retired professor, author, and *Boston Globe* columnist Donald Murray, and Donald Graves, a nationally

recognized professor of education specializing in teaching writing, Newkirk continues to develop programs, workshops, and seminars and to write books to benefit teachers of writing.

In addition to helping teachers, Newkirk remains dedicated to his students, constantly and seriously considering what makes a student want to learn.

"It's important for the students to feel the pleasure of work, for them to have the sense that it's fun to be immersed in a project—those times you lose track of time completely. As teachers we can demonstrate who we are and how we go about our work. These are some of the indirect lessons. It can be a great privilege to experience moments where work and fun are merged.

—Jan Waldron, writer/editor,
University Publications

Warming Up the Classroom

Patty Bedker is talking to students as she walks through the double doors of Murkland Auditorium, lugging an overhead projector and notes for her fifty-minute Foods and People class—called by her students "Foods and Dudes."

It is fifteen minutes before the start of class. It is the next-to-last class of the spring semester. It is Friday, sunny and seventy degrees. There are three hundred students waiting for Bedker, assistant professor of animal and nutritional sciences, to begin teaching.

She sets up the projector, reaches up—she is short—with a two-by-four to grab the string that pulls down the screen, and begins the walk up the long aisle talking to students on either side of her.

Bedker manages to make this popular general education course small, intimate.

In addition to two lectures three times a week—three hundred students in each—Bedker

oversees twenty-four labs each week that accompany the lectures.

"Learning doesn't have to be depersonalized just because there are hundreds of students," she explains. "You can change it."

And she does. In the middle of a lecture on the role protein synthesis plays in the treatment of diabetes, someone, way in the back, sneezes. Bedker is in the middle of a sentence, pauses ever so briefly, says, "Bless you," and finishes the sentence. With so many Reebok sneakers shuffling and papers riffing, it's a wonder she heard it.

"I was an undergraduate at a big state university," Bedker explains. "Essentially, I was a number and I said to my friends, 'If I ever teach a large class, I pray to God I don't treat students like this.'

"Well," she continues, "God was listening that day. Every student who takes a class with me is a person, not a social security number."

In addition to two lectures three times a week—three hundred students in each—Bedker oversees twenty-four labs each week which accompany the lectures.



A few years ago, Bedker offered nontraditional students a section of Foods and People in which a corner of the large classroom was reserved for kids.

"There was no child care available for the students," Bedker explains, "and I wasn't going to let that get in the way of their getting a degree."

Bedker earned her bachelor's degree from the University of Massachusetts at Amherst, and went on to work at a science center in Needham, Massachusetts, coordinating educational programs and exhibitions.

When she came to UNH to pursue her master's degree in animal and nutritional sciences, Winthrop Skoglund, now professor emeritus of animal sciences, became her mentor, according to Bedker.

Not so, according to Skoglund. "I claim her as my foster daughter," he says, "My wife and I are her foster parents."

"She works overtime for students" Skoglund says he pushed Bedker because she so clearly loved teaching and loved students. "She works overtime for students," he says, "and I've never seen anyone relate to people the way she does. She is genuinely interested in what people are doing."

It was because of Skoglund that Bedker went on to get a Ph.D. in animal sciences from Cornell University. Her research areas are in examining the raising and management of egg-laying hen strains and—this comes as no surprise—larger-class teaching styles.

After earning her doctorate, she returned to UNH and did postdoctoral work with Sam Smith, professor of animal and nutritional sciences. Following that, she became a faculty-in-

residence at the University. She became an assistant professor in 1989.

In class, a student raises his hand thirty-three rows away. She walks toward the student as he asks a question and answers him when she gets to his row.

Bedker's trick is looking for what she calls "thermostats—the people who just don't want to warm up."

They are usually, though not exclusively, nontraditional students, "the ones who sit in the back of the class," Bedker says. "They've just come back to school, after being part of the working world for a while, and they feel as though they stick out like a sore thumb with so many eighteen- to twenty-one-year-olds. I've been watching them for so long, I can spot them the first week of class.

"My goal is to move them to the front of the class by mid-semester," she says. "A teacher doesn't have to worry about the A students—they're always up front. It's the C students I want at the front, and I do it by paying attention to them, taking some time to show interest in them. I talk to them; I engage them. Gradually, they begin sitting closer to the front of the class because they want to be there."

It is because of her work with nontraditional students that Bedker received in 1989 the University's Bertha T. Watkins Award for Service to Nontraditional Students.

A few years ago, before the University's child care center was

built, Bedker offered a section of Foods and People to nontraditional students who could bring their children to class. A corner of the large classroom was reserved for kids.

"There was no child care available for the students," Bedker explains, "and I wasn't going to let that get in the way of their getting a degree."

In addition to teaching in the animal and nutritional sciences department, Bedker also teaches graduate courses in the vocational, technical, and adult education department.

Her method of teaching, she explains, is one that involves change. "Teach for today, not for tomorrow," Bedker says. "I teach things they can apply in their daily lives and I have a positive attitude to material I'm teaching about."

Class projects include voluntary participation in an annual "Crop Walk," which raises money for the needy—550 students participated this spring—as well as class journals in her Introduction to Animal Science course.

Participating in the community

Bedker also maintains that teachers need to "act like they want to be here. I suppose it's easier for me because I live in Durham," she says, "but students are doing a great deal here and they need to know faculty care about that."

Bedker attends the annual "Greek Night" for faculty, sponsored by sororities and fraternities

at UNH. One of her six hundred students, an art major, exhibited in the annual Bachelor of Fine Arts exhibition, and Bedker was there for the opening reception at the University Art Galleries. When the University closed the international students' residence hall during spring break this year, Bedker brought six international students home with her for the week. And, she says, she receives about twenty-five phone calls each day from students.

"We say a lot about community spirit at UNH," she says, "but we need to show it more. We need to be more a part of the community."

As faculty adviser to the Catholic Student Center, Bedker counsels students on a variety of issues, says Father Rick Pennett. "She is one of the most dedicated teachers I have ever met," he says. "I can refer students who are having problems to her and I know I will get a confidential follow-up with always good advice on what to do next."

Pennett says that Bedker is able to "articulate the needs of students very well, primarily because she cares genuinely about the total well-being of students."

For example, when she heard from one of her students that there were concerns in Forest Park, a housing development for married students owned by the University, Bedker brought her washing to the Forest Park laundromat and talked with residents about their concerns.

"She goes way beyond the limits of the classroom," Pennett explains. "If there needs to be a change, Patty can take a strong stand on whatever it is—but she doesn't complain. She rolls up her sleeves and helps to get the work done, even when it's not necessarily politically expedient to do so. That's what I admire in her: that right is right, and wrong is wrong; and she's not afraid to say so."

"Teaching three hundred students at once is easy," she says. "You get to class early, you stay late. The policy in the animal and nutritional sciences department is to keep your door open literally and figuratively."

—Kim Billings, assistant director,
University News Bureau

Taking the !@y%!# Out of Computers

Karla Vogel is accustomed to her students' confused glares and frustrated sighs.

The apprehension is not directed toward Vogel, however, but to the computer screens and keyboards her students work with in their efforts to master the brave new world of high tech.

Vogel teaches an introductory course in microcomputer applications and a course in office automation at UNH Manchester.

According to Dean Lewis Roberts, Jr., Vogel "is a nontraditional faculty member in that she does not have a doctorate degree, but she is renowned by her peers and students for her knowledge of the material covered in her courses, her organizational skills, and her enthusiasm."

Vogel, who admits surprise at being named a recipient of the Teaching Excellence Award, says her job simply is to make learning about computers as frustration-free as possible.

And, according to students, she is succeeding. As one recently wrote in an instructor evaluation:

"For me, the material was very foreign, but with the instructor's incredibly systematic approach, everything was clearly explained . . . I am pleased to enter the twentieth-century world of computers."

Vogel understands her students' initial trepidation and eventual fascination with computers. After all, she was once a novice herself.

In the early 1980s, while a junior high school English teacher in the Nashua public school system, Vogel took an introductory computer course to acquaint herself with what she perceived as up-and-coming technology.

"I took my first course with the idea that computers were coming into the public schools and I wanted to be prepared."

Karla Vogel likes the mix of young and old at UNH Manchester. Her students range in age from retirees to recent high school graduates, and each age group uses its own particular approach to computers.

One course was followed by several more and, in 1985, she decided to leave the classroom after fourteen years to take a position at what was then Merrimack Valley College, to oversee its new crop of IBM personal computers.

When Merrimack Valley became UNH Manchester in 1986, Vogel found herself not only training staff and maintaining equipment, but in the classroom, helping others master the ever-changing technology.

Vogel likes the mix of young and old at UNH Manchester. Her students range in age from retirees to recent high school graduates, and each age group uses its own particular approach to computers.

Some younger students are familiar with computers from courses in high school, while others are sitting in front of terminals for the first time. "But they're willing to take more risks. They're not afraid to see what will happen if they press this or that key."

Older students, she says, are more cautious, but she applauds the quality of their work and

"More women are coming out and are willing to attack the new technology. When they see me, as a woman, taking a computer apart, it gives them more confidence."



dedication to a cause: in this case, mastering a new skill.

Vogel is impressed by the personal sacrifice many non-traditional students make to return to college and by the overall excellence of their classroom work. Often they are balancing a full work day, a family waiting at home, and the academic requirements of Vogel's computer class.

One woman, Vogel recalls, was so busy with work and family that the only time she could finish the last lab assignment was on the last day of the semester, after completing the final exam.

"There she was at 8:30 P.M., working feverishly to see if the program would run without any bugs before turning it in," says Vogel. "That kind of dedication is an inspiration to any teacher. How can you not perform for people like that?"

She also points out that more older women are appearing in her classes. "More of them are willing to attack the new technology." The fact that she is a woman gives incentive to these students. "When they see me, as a woman, taking a computer apart, it gives them more confidence."

"It's like driving a car"

She also tells students it's normal to experience some apprehension when sitting in front of a computer screen for the first time. "It's like driving a car. If you always have the fear that the car is in control, it will be."

In addition to classroom work, Vogel oversees UNH Manchester's computer labs, where her students turn theory into practice.

"When I work in the labs, I get a firsthand view of what didn't come across in the classroom. It helps me prepare for the next class when I see the problems develop in the lab applications," says Vogel. She also enjoys the opportunity to witness students' apprehension giving way to fascination.

"In my opinion, the lab is where all the computing action is, and I like to be a part of it."

Computers do not come without drawbacks

Vogel is a disciple of high tech, but sees that computers do not come without drawbacks. She

points out that yesterday's rush to embrace the new technology has been replaced by a cautious evaluation of how that new technology can best be used.

"There first was that rush to get a computer on your desk," says Vogel. "Now, the focus is, how can I get it to do my work most effectively?"

Computers are making information more accessible to the general public, Vogel admits, but the goal now is to make the general public more accepting of computers. With the technology now invading the workplace, libraries, doctors' offices, even the corner grocery store, those not making an effort to at least understand the technology could make up a new social class in the future, Vogel warns.

"The more technology in our lives, the greater the possibility of strata," she says, with "information lords" who could control those without knowledge of computers.

Vogel also believes it is possible at the same time to put too much trust in the computer. "You have to be cautious," she says. "We have to learn to question the output," since the computer will use only the information it receives. Unreliable data lead to unreliable conclusions, she says.

That's why Vogel's enthusiasm in the classroom and in the workplace is tempered by the realization that technology is only as good as those who create it and those who know how to use it critically and intelligently."

She also knows that what is "the latest technology" today may not be tomorrow.

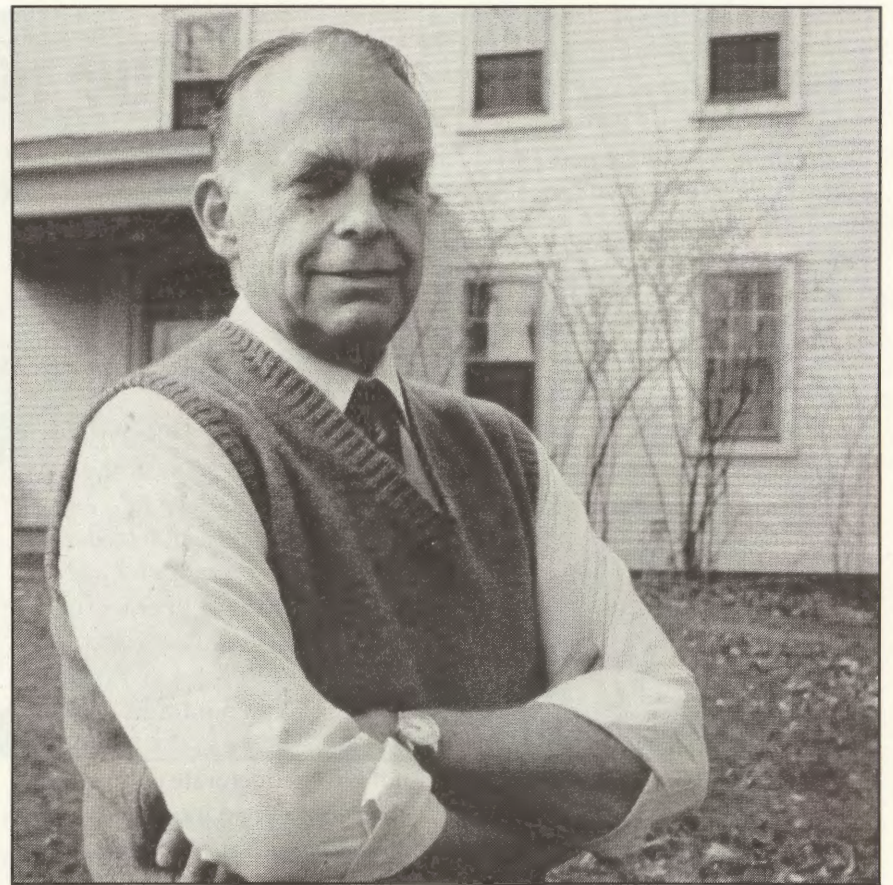
"They call me a microcomputer specialist, but there's no such thing. The technology changes so fast," she explains.

Still, Karla Vogel is the closest thing UNH Manchester has to a specialist. She helped develop the associate degree program in computer information systems. She repairs and maintains equipment and generally acts as troubleshooter for computer problems large and small.

Is there any technology Vogel hasn't mastered?

She thinks for a moment, then brightens. "I can't work my VCR, how's that?"

—Carmelle Druchniak, editor, Campus Journal



Working With Angels

Years as a commercial loan officer and assistant vice president at a Pennsylvania bank taught William Wetzel, Jr. the importance of establishing and maintaining contacts with the business community.

It is a habit he has found hard to break.

As a loan officer, Wetzel had a service to offer clients. Today, as Forbes Professor of Management, Wetzel offers his services as an academician and researcher.

"Doing public service is not just for service's sake. It has to be part of your teaching and research," he explains. "Public service is bringing expertise from your academic life to the public arena and vice versa."

It is for more than fifteen years of service to the local, state, and regional business communities that Wetzel was named the recipient of the University's Excellence in Public Service Award.

Wetzel, who has taught at UNH since 1967, is a founding member and past president of the New Hampshire High Technology Council and has conducted research for groups that include the New Hampshire Business and

Industry Association, the U.S. Small Business Administration, and the National Venture Capital Association.

Perhaps the accomplishment for which he is best known is the Venture Capital Network (VCN), a not-for-profit corporation managed by the University's Center for Venture Research. Marking its sixth anniversary, VCN matches fledgling businesses with individuals who can provide crucial start-up financing.

In its six years of operation, VCN has matched more than twenty-five entrepreneurs needing early-stage financing to more than forty-five individual venture investors, corporate investors, and venture capital firms, for a total of more than ten million dollars. VCN clients range from a company that developed a new process for brewing alcohol-free beer to a firm specializing in electronic image processing.

Wetzel's work with venture investors, so-called "business angels," has attracted national attention: on his office wall is a framed *Wall Street Journal* article describing VCN, and in his files are countless other articles from

"Doing public service is not just for service's sake," William Wetzel explains. "It has to be part of your teaching and research. Public service is bringing expertise from your academic life to the public arena and vice versa."

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Business Week, the New York Times, and dozens of other regional and national publications.

The right place at the right time

"We're credited with doing the first research on how significant business angels are," says Wetzel, but he adds he was surprised at all the attention. "I think we were simply at the right place at the right time."

The media attention also means Wetzel spends considerable time on the telephone, talking with would-be entrepreneurs about their ideas. One recent caller, a woman from Walla Walla, Washington, phoned Wetzel for advice on her husband's invention: a computerized gadget that would allow aspiring major league pitchers to see how they'd do against the pros.

"I hate to give advice quick and dirty," he explains, "but I told her that maybe their next step should be to find a company interested in licensing the device." Most people, says Wetzel, even those with great ideas, have little understanding of how involved financing, marketing, and start-up operations can be.

The calls continue despite fears about a sagging economy and a slowdown in new business growth. "There will always be entrepreneurs," he explains. Major companies have found that product life-cycles are shortening, he says, and new ideas from new sources, namely, entrepreneurs, are needed. Wetzel points out that up to fifty percent of some companies' product lines consists of items that did not exist five years ago, products that are the result of entrepreneurial enterprise.

"Entrepreneurs must have tunnel vision"

Would Wetzel himself make a successful entrepreneur? He smiles. "I consider VCN an entrepreneurial effort, although a non-profit one."

Wetzel adds, however, that he does not meet the requirements to be a successful, for-profit entrepreneur. "You have to have tunnel vision," he says, with one focus on one project. "I'm doing too many things at once."

"You also have to want to make a lot of money," he adds, pointing out that if monetary gain

were his goal, he would not have pursued a career as a college professor.

It was while Wetzel was working at that Pennsylvania bank that he realized that he didn't want to end his days as his bank's vice president, or even president.

After his promotion from commercial loan officer to assistant vice president, Wetzel said he began to miss the daily contact with what he terms "shirt-sleeve entrepreneurs." At that time, he was teaching a night course at the American Institute of Banking and, during evenings off, was pursuing his master's degree in business administration at Temple University.

Still, it wasn't enough, he says. With a fellowship from the Ford Foundation's New Careers Program, Wetzel decided to leave banking, and Pennsylvania, and move his young family to Chicago, where he entered the University of Chicago's Graduate School of Business.

Two years later, after completing the Ph.D. coursework, but without completing the thesis and receiving the degree, Wetzel applied for a faculty position at UNH. He has been fulfilling his wish to keep in touch with shirt-sleeve entrepreneurs ever since.

This year marks the end of a chapter for Wetzel: VCN will soon be taken over by the Massachusetts Institute of Technology's Enterprise Forum.

More than eighty percent of VCN clients have been technology-based ventures, he explains. These ventures provide New England with a competitive edge in the global economy. The move to MIT will provide VCN with an institutional base from which it can focus its resources on service to emerging technology-based enterprises.

However, the University's Center for Venture Research will continue its work. It includes other UNH faculty members who collaborate with Wetzel on a variety of research projects. Current work has focused on equity financing for New England's new technology firms, as well as on the importance of early "seed" financing of such ventures.

One study revealed that it is business angels, like those recruited through VCN, rather

than larger venture capital firms, that most often provide small companies with crucial start-up financing.

Wetzel points out such research is not only regional and national in scope: he has sent information to Israel, Sweden, Australia, and Yugoslavia. More contact with Iron Curtain countries is planned, he adds.

In addition to the research and public service Wetzel believes are crucial to the University's mission and to his own career, Wetzel has maintained contact with students in the classroom. For the past fifteen years, he has taught a full courseload, from the undergraduate to the graduate MBA level.

Drawing students into conversation

"If I have a philosophy of teaching, it's one of collegiality," he explains.

"During the first week of class, I try to get to know the students by their first names," he continues. "I then try to draw them into conversation about concepts, applications, and theory. I try to teach accounting from a user's point of view."

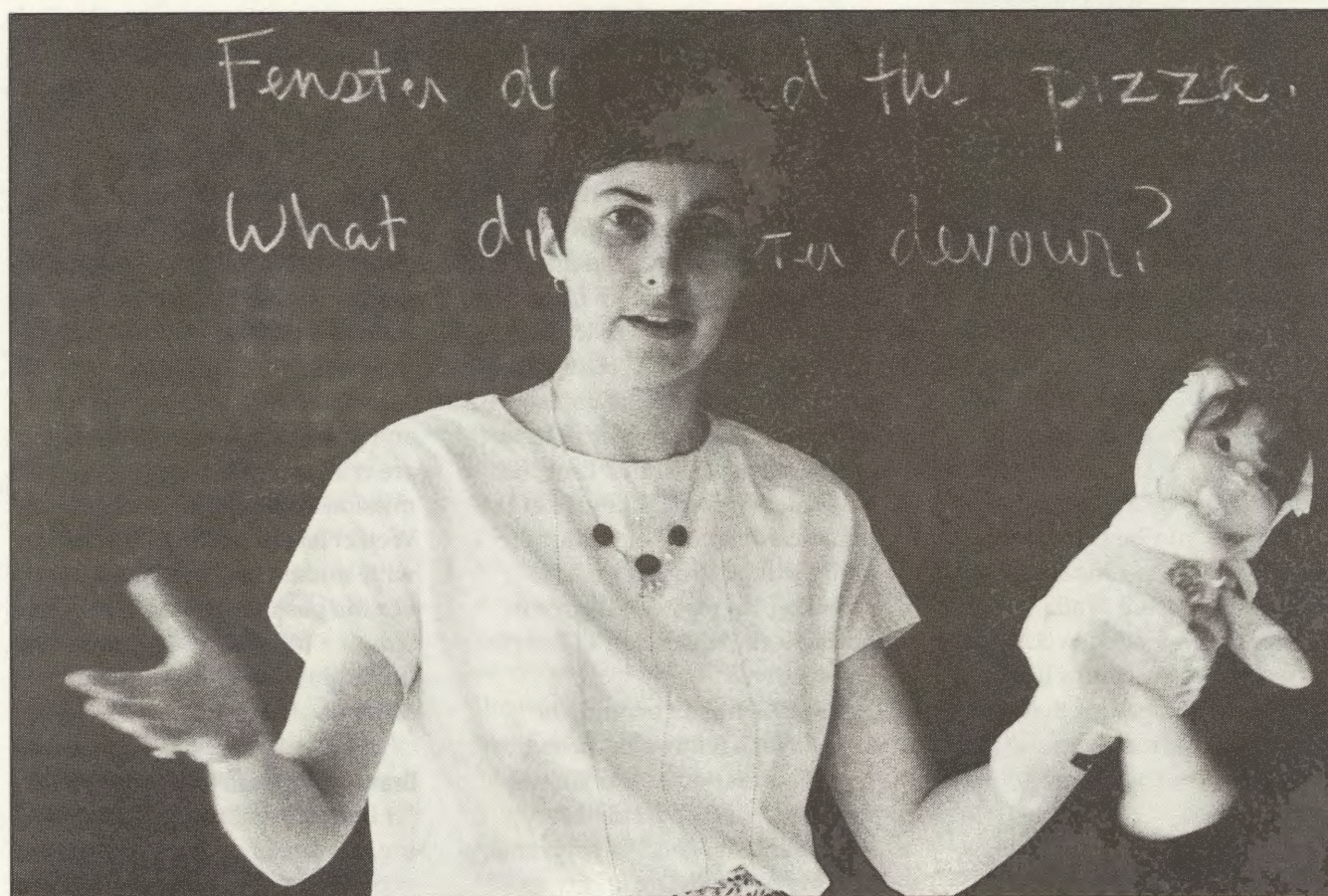
Wetzel also teaches Entrepreneurship: The Management of New Ventures. Analyzing topics ranging from marketing to operations, the course allows students to develop their own business plans. The results are always surprising, he says. Some students have great ideas, but fail to devise sound business plans, while others are familiar with marketing strategies, but are without a solid concept.

Wetzel does not hesitate encouraging students to pursue careers in business, even in today's world of Ivan Boesky and Michael Milken. Wetzel agrees that business has suffered as a result of screaming headlines on insider trading and shady business practices.

But, Wetzel points out, "that's Wall Street. As for entrepreneurs, well, they're people who start new businesses, who create jobs, who raise the standard of living with new products."

Such individuals, he says, "are builders, they're creators."

—Carmelle Druchniak, editor, Campus Journal



In her "lively lectures punctuated by humor and personality," as one student describes her class, Rochelle Lieber looks for new ways to capture students' attention. "I often use absolutely ridiculous sentences, such as, oh, 'Melissa fondled the triceratops,' to get my points across."

knows what the rules are. There are as many theories as there are different people who study it. Most students come around to an understanding of this, and in a way are greatly relieved."

Jumping up and down to make a point is not an unusual tactic for Lieber. In her "lively lectures punctuated by humor and personality," as one student describes her class, she looks for new ways to capture students' attention. "I often use absolutely ridiculous sentences, such as, oh, *Melissa fondled the triceratops*, to get my points across. But I do get some weird looks from the back of the room!"

Another of her tactics involves assigning in-class exercises in linguistic analysis. "I don't like straight lecturing; I like activities where students can pick up skills, interact with each other, look at linguistic data, and develop their own ideas."

These exercises might involve giving students groups of sentences from other, unfamiliar languages (with the words translated) and asking them to figure out rules governing word order, placement of modifiers, and so on. "Even if the students don't know anything about a particular language, they can look at it and, by comparing it to English, see something about the structure."

Learning to question: sometimes things are crazy

Linguistics is a rapidly changing science, according to Lieber. "At MIT [where Lieber earned her Ph.D.] one of my professors used to joke that if you didn't like a particular theory, it was okay, you could wait thirty seconds, and then it would be disproven."

This heady rush of change and sense of being part of an evolving science are what enticed Lieber to become a linguist. She studied anthropology at Vassar, doing fieldwork with a vanishing

Word-Crazy

Green-crazy? Truckbook? Overground? Hmm . . . unusual words, but not impossible in English. There are situations for which such words might be invented. But what about *during-happy*, *put-box*, *green-dry*? Why don't these work? What word combinations are possible? And why?

These are the questions that UNH linguist Rochelle Lieber likes to ponder. Much of her work is concerned with word formations, with constructing a theory that will account for possible words. Curiously, her articles on these fine points of linguistic theory are filled with words and phrases that might seem impossible to the layman—"allo-morphs," "percolating features," "autosegmental representations." But her task as a linguist is to explain formally what we do so naturally and easily—use language.

"Linguistics is a subject that can be very abstract, very theoretical," Lieber admits. "But there are ways of making it concrete for students. And I guess if I have anything that could be called a

philosophy of teaching, it's making these things concrete. I want to give students the sense that they can look at data that seem very complex and make their own judgments."

Fondling the triceratops; or, how to have fun with English grammar

Lieber teaches courses in introductory linguistics, phonology, syntax, history of the English language, twentieth-century linguistics, and—"about the driest subject around," she admits—English grammar. "Students come into English grammar having been trained to think it is dreadfully dull and boring and that they already know it," says Lieber. "But I try to show them that there is no monolithic thing that is English grammar, that the study of English grammar is the study of how languages work."

"Students are sometimes initially frustrated in my class," she continues. "They say, 'Oh, I just came into this class to learn the rules, just tell me the rules.' And then I jump up and down and say, 'There are no rules! There are no rules!' Nobody

"Linguistics is a subject that can be very abstract, very theoretical, but there are ways of making it concrete for students. And I guess if I have anything that could be called a philosophy of teaching, it's making these things concrete."

American Indian tribe in Arizona. In the course of tape recording the elders' life stories, she also became interested in recording their dying language. From fieldwork, she moved to the airy, theoretical side of linguistics. "I enjoyed the fieldwork, but I knew that what I liked best was linguistic theory—the really abstract stuff. It's difficult, it's a real puzzle. There are so many explanations that don't work. So I'm never bored with it."

Students of linguistics, Lieber believes, need to learn to question everything. In her classes, she encourages discussion and allows the students to get side-tracked when the talk takes a promising turn. Her receptivity comes from a basic regard for her students. "I believe it's important to have respect for my students, to speak to them directly and listen to what they have to say. . . . Sometimes you can explain things to students that look 'crazy and arbitrary,' but sometimes you can't. Sometimes they really are crazy and arbitrary. Admitting this teaches students a healthy questioning of what they read."

On file cabinets and the pin vs. pen dilemma

The impulse to ask new questions propelled Lieber into her particular area of research—word formation. "Until I wrote my article [on compound nouns], there was almost nothing in the literature on why we don't put together certain combinations. . . . If you don't think to ask the question, then you don't look at the data in a fresh way."

Lieber's research investigates "the relationship between the sorts of word formations you find in languages and the syntax. Are there some sort of principles that govern the position of the elements?"

She glances about her office for an example. "Take the compound *file cabinet*. *Cabinet* is a noun, and *file* is a noun, but in some semantic sense, *file* is modifying *cabinet*. Well, when you look at English nouns and their modifiers and phrases, adjectives always precede nouns. Is this an accident? It's a question that people haven't asked in quite that way."

Her questioning mind was shaped at one of the most prestigious and grueling graduate

linguistics programs in the country—MIT's. "You're not taught a lot at MIT," she recalls. "You're expected to become a productive scholar. The minute you get there, you're expected to be doing original research. And it's a big shock, but it works."

After leaving MIT, Lieber spent a year teaching at the University of Alabama at Birmingham—a very different setting from the supercharged environment of MIT. "I really had to learn to take what I knew and make it concrete and find the right level to talk to my students. At first, I was a miserable failure. I had to figure out where to meet students."

One embarrassing, and yet instructive, moment occurred in an introductory class as she was explaining the phonetic alphabet. "I put on the blackboard the

symbol for the vowel \i\ and the vowel \e\. And I gave as examples the words *pin* and *pen*. I looked out at the sea of faces, about thirty of them, and they were all looking very puzzled. It was clear something was wrong. Finally, one student said, 'Say those words again.' It turns out that in that dialect area they use the same vowel in front of a nasal, so there's no distinction between these two words. This was a fact about this dialect I didn't know. I had chosen precisely the worst examples to use!"

Lieber did find the right examples and the right level at which to meet her students. Since coming to UNH in 1981, she has also been actively engaged in research, having written more than a dozen articles and one book, with another under way on

word formation. Research and teaching, she believes, are inextricably linked: "Being an active researcher informs my teaching, and I really enjoy both."

Lieber spent last fall in Amsterdam at the Free University, doing research on a fellowship from the Dutch government. "It was very nice to be able to get a big block of work done all at once," she remembers, "but you get tired of sitting in an office all by yourself . . . I got to miss having students around and popping in to talk about things, and having a change of pace. I like having that balance."

She manages to strike that balance between teaching and research. When describing Rochelle Lieber, *teacher researcher* is definitely a possible word.

—Clare McMillan, writer/editor,
University Publications

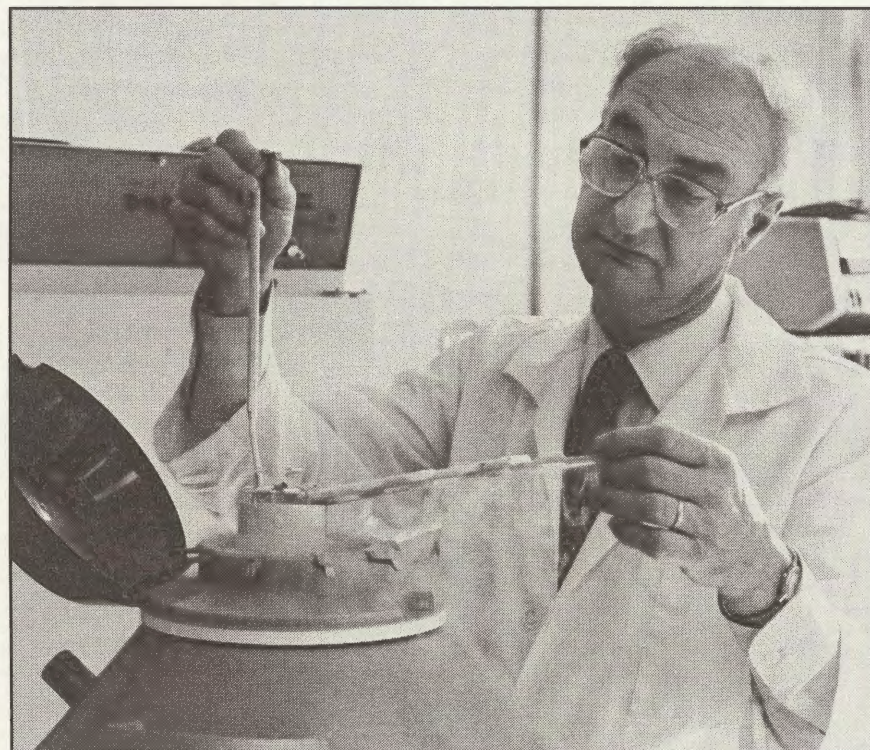
Appreciating the Relatedness in Biology

"I've fought against specialization all my life," says Professor Richard Strout, retiring after thirty-six years in the University's department of animal and nutritional sciences. "A biologist must have knowledge and strength in a specific subject, but having an overview is a tremendous advantage in being able to see relationships.

"There are interrelationships among plants and animals, among the organs within an animal, among the cells within the organs, among parts of cells. Biology is so wonderfully organized, and I try to get students to recognize its incredible relatedness, to show them a reverence for life."

Strout is truly a generalist, not only in his research interests but

"As I grow older, biology seems more and more incredible. Every reaction that takes place in your body is incredible. Life is a miracle, there's no other way to express it, and you see it more the longer you live."



"I try," says Richard Strout, "to get students to recognize the incredible relatedness in biology, to show them a reverence for life."

in his approach to his profession and the pattern of his career. He's a researcher whose students call him the University's most enthusiastic teacher, a laboratory scientist whose fieldwork in Latin America "had a dramatic impact on my life."

Strout is one of those rare academics, according to his department chairperson, William Condon, equally good at teaching and research, and whose commitment has included active involvement in a variety of University committees. "If we were talking about medicine," says Condon, "he'd be a general practitioner. He does everything."

"I have always," says Strout, "considered it a privilege to be a college professor. To share a learning experience with someone else, to be able to see the growth and maturity that occurs between a student's freshman and senior years, is for me a tremendous experience."

The development of his students' maturity is a source of fascination for Strout.

"I was at an honors luncheon the other day," he says. "It was mostly seniors, and we were discussing the University. I was delighted with the depth and interest they showed. I thought, four years ago, this couldn't have happened. They're demonstrating a maturation process. Their points were good, perceptive. And that's what education is all about—being cognizant of the important aspects of a situation."

"It takes time to understand the relationships"

"Biology has become so complex, one has to develop an overview. That's where the maturity comes in. There are relationships among everything in science, and it takes time to understand the relationships."

"It's a thrill to see students direct their own learning," he says. "If a professor can ignite their curiosity, they can carry on by themselves. To see young people who want to learn, *there's* the payoff."

"When I see them in the lab on a Sunday, checking their cultures, their media, happy at what they see—excited about seeing their first chromosome—you know you've scored. To have

had a hand in that discovery is the essence of teaching."

Strout's teaching evaluations are spiced with phrases like "the most enthusiastic teacher I've ever had"; "by far the best course I've ever taken"; "this course has been the most enjoyable course that I have taken at UNH." Comments like this are routine: "I want you to know that I think of you as the best teacher I have ever had."

Strout's enthusiasm for teaching was engendered by his interest in biology. "I find the subject so fascinating myself that I have to be enthusiastic in my teaching. As I grow older, biology seems more and more incredible and complex. Every reaction that takes place in your body is incredible. How everything happens together—it's truly a very beautiful thing. Life is a miracle, there's no other way to express it, and you see it more the longer you live."

"You just commit yourself to understanding"

In the late sixties, Strout's research took him to Central America for postdoctoral work in parasitology. It was this work that so affected his life. "I've held a starving child in my arms," he says. "You just commit yourself to try to understand why such things happen, and to try to help in a situation where eighty percent of the people are destitute. Life there is 180 degrees different from what I grew up with."

What Strout grew up with in Auburn, Maine, was "a strong family unit. I was blessed with loving parents who wanted the best for us. There was never any question that my sister and I would go to college."

"I grew up in the war years and joined the Navy at seventeen, leaving home two days after graduating from high school, never realizing what I was doing to my parents. I spent my eighteenth birthday on Guam."

At war's end, he enrolled at the University of Maine in Orono. Strout attended graduate school at UNH, receiving his doctorate in zoology in 1961, and with his wife, Beverly, a teacher of expository writing, raised a son and daughter. He has taught here his entire career.

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The implications of cell culture

Strout has developed and taught a range of courses in a variety of fields, from Reproductive Biology in Domestic Animals to Diseases and Parasites of Wildlife during his years at UNH, but the backbone of his teaching and research has been in the field of cell culture, essentially a research tool in which cells from an animal or plant are grown in plastic vessels where the cells can be more precisely studied than they can in the living host.

The uses of cell culture, says Strout, are in "just about every area of biological research one wants to consider." Cell culture is basic to biotechnology and cancer research, it's used in making skin grafts for burn victims, it was essential in developing the polio vaccine, and it's a major tool in the study of heart disease. Its personal implications for Strout have been just as crucial. "Cell culture," he says, "directed the course of my career."

"Cell culture really started in the thirties, and after World War II, a new industry developed. I didn't realize it but I was stepping into a whole new arena."

As a master's candidate, Strout's mentor was W. Robert Dunlop, who had brought cell culture technology to UNH. But Dunlop's focus was on research, not teaching. It was Strout who, in the early sixties, brought the concept to UNH classrooms.

For years, study of cell culture was restricted to graduate students, but recently, undergraduates have begun taking the course, a rare opportunity in higher education, making their degrees a highly marketable commodity. "Any biological science graduate with

experience in cell culture," says Strout, "can go down to Cambridge, Massachusetts, and immediately get a job in a biotechnology lab. We have graduates in labs all around the country."

Providing career opportunities, though, is not foremost among Strout's goals. "I'd like to think I've touched my students in such a way as to enhance their understanding of the biotic world," he says, "that I've helped make their lives more enjoyable, quite apart from helping to train them for good jobs and careers."

"We're on the threshold of great advances"

The idea of development, of progress, is critical to Strout's view of the world. "Life is so fascinating to me, science especially. That's why it frustrates me that we're advancing so rapidly in science, but so slowly socially."

"The potential for improving human well-being is the greatest in history in terms of science. We're on the threshold of great advances—cancer will likely be cured, and other hideous problems that have plagued mankind for centuries will be solved. So when one looks at the homeless, at the overflowing prisons, at the world filled with so much greed and hate, it doesn't make sense."

"But in my classroom, I've had some of the most wonderful people as students, and my personal experiences have been overwhelmingly positive. In my classroom, I see so many youngsters with their heads on straight that my faith is renewed."

—Louis Mazzari, writer/editor,
University Publications