MATH • SCIENCE • NURSING • ALUMNI

NEWSLETTER

MORNINGSIDE COLLEGE, SIOUX CITY, IOWA SPRING, 1983

Computer Facilities Expanded Again

In last year's newsletter we brought you up to date on our new academic PRIME computer which was installed to supplement our "old" PRIME now dedicated to administrative uses. Jacobsen 121, our student terminal room, is only two rooms away from the computer center. It now houses a dozen terminals and two APPLES. The PRIME supports ten computer languages.

We now have a micro-computer lab in the next room which opened this semester. With ten Commodore-64 micros for student use during lectures or labs and the instructors Commodore-64, Room 122 is now dubbed the "Commodore Room." Each student station has a micro with a disk drive and TV monitor mounted to the center of a six foot long table. Two students share their interactions with the computer while such details as output formatting are illustrated. This dynamic approach to teaching BASIC is quite popular with students. Over 150 Morningsiders are taking a course this semester using Elementary BASIC, Intermediate BASIC, and Computer Assisted Instruction.

With the aid of federal funding we now have two dozen terminals or micros which our students use in their computer science courses. (This does not count the APPLES used by Biology, Chemistry, and Physics or the growing number of computers in use by our colleagues in other departments. Mass Communications, Student Services (for tutoring), and Philosophy have joined the list of other users started by the Foreign Language Department.)

It is worth noting that 60 computer students per terminal (or micro) is rated an adequate support system. At Iowa State that ratio has resulted in three hour waits for a half-hour of computer time. Morningside's ratio is now about ten to one — comfortable and poised for growth.

Our micros are being used by Continuing Education night courses, an Explorer Scout series, and have been used by a Grace United Methodist Church group as well. □

Faculty Focus: Robert Wood Green

The "Greening of Morningside College" is not the latest paperback; it is, rather, an acknowledgement of three decades of influence of the Green family on the College. Dr. Robert Green's association with the College began in his undergraduate years; he received his B.S. degree in physics from Morningside in 1943. Upon completion of his master's degree Bob became a physics professor at the College in 1950, a position he holds to this day. Mrs. Green, "Ruth" to everyone at the College, has had a long association with Morningside herself, first as a staff person in the Registrar's Office, then as Grants Coordinator, and since 1975, as coordinator of a multimillion dollar Title III grant. And then there are the Green's children, Robert Jr. and Sandra (Green) Montignani. Robert graduated from Morningside and is currently an attorney in Sioux City. Sandra, who attended Morningside but graduated with a degree in home economics from Iowa State, now lives in Dallas, Texas.

It is Dr. Green, however, who is the focus of this article. After completing his undergraduate study at Morningside and a stint in the Navy during WW II, Bob attended the University of Iowa where he completed his M.S. in physics (crystallography and solid state physics) in 1949. After a brief teaching assignment at Iowa Wesleyan College, Bob joined the faculty at Morningside in 1950. By the mid 1950's it had become apparent that a Ph.D. degree was necessary for a College physics professor, so Bob and his family traveled to Ames where he taught full-time while pursuing his doctoral research. The research was again in the area of solid state physics, a study of the magnetic and resistivity properties of single crystals of Erbium and Dysprosium. The Greens returned to Morningside in 1960 whereupon Dr. Green assumed the position of Chair of the Physics Department. Since then Bob has continued his professional association with Iowa State. He has returned for short intervals and for a sabbatical leave in the spring, 1974, to work as a member of a research team. Articles resulting from this research have appeared in professional journals.

Robert Green

Dr. Green began the study of physics in the basement of Lewis Hall where the Physics Department was located at that time but most of his career has been spent in Jones Hall. There, Dr. Green directed the growth of the physics department during the post-Sputnik boom in the sciences. The physics curriculum made the shift from classical physics to a curriculum with more emphasis on modern physics, quantum mechanics, particle physics, and contemporary electronics. The emphasis in pre-engineering was retained but was restructured and transfer agreements were established with engineering programs at Iowa State University.

When asked why he has stayed in college teaching for almost forty years, Bob comments with characteristic understatement that "his compensation and satisfaction has been in seeing his students learn, develop, and progress." He is quick to add that he, too, has learned from his students and observes that this year's freshman class is really keeping him on his toes. Bob indicates that he chose to teach in a liberal arts college campus because he is convinced that a liberal arts education is the

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New Faculty Bring Experience and Skills

In a time when it is increasingly difficult to hire qualified, excellent teachers in mathematics and computer science, the College has been fortunate to "strike gold" in two faculty hired this past year. They are:

Dr. Douglas Swan. Dr. Swan is the new chair of the Mathematics/Computer Science Department and fills the vacancy left when Dr. Carol White moved to a position in

Dr. Douglas Swan

computer science at Mankato State College, MN. Doug is an extraordinarily fine teacher with eighteen years of college teaching experience. He has his M.A. and Ph.D.'s in mathematics from Michigan State and the University of Vermont, respectively, and comes to Morningside after having chaired mathematics departments at Detroit Institute of Technology and Jamestown College, N.D. Under his leadership the Mathematics Department at Jamestown saw its class size double in four years. Doug has been active in student recruiting and while at Jamestown initiated a math meet for high school students which attracted as many as one thousand participants. It is already clear from just the few months that he has been at Morningside that Dr. Swan is an excellent teacher and administrator.

Mr. William Steinman. Mr. Steinman is filling a new position in computer science which gives the College two full-time faculty in the computer area. Bill has both of his degrees from the University of Wisconsin-Eau Claire, a bachelor's degree in business education and a Master of Science in Teaching with emphasis on computer information systems. Bill also had three years of college teaching experience at the University of Wisconsin-Eau Claire. He is teaching a variety of courses in computer science including

Wiliam Steinman

BASIC, COBOL, Applications Programming, File Processing, and Systems Analysis. With his emphasis on the business applications of the computer, Bill's skill complement nicely those of his colleague, Keith Tookey, whose interests are in the mathematical and technical applications of computer science. It is already clear from his first semester student evaluations that Bill is a fine, young teacher who has not only mastered his discipline but has the ability and patience to communicate it to his students. □

Placement of Science Graduates

As an Alumnus you are no doubt interested in the recent graduates and whether they are upholding the College's reputation for academic excellence. Be assured that they are. A recent survey traces the placement of our graduates in the sciences back seven years and is clearly a success story.

Following a country-wide trend in the last decade, a significant number of Morningside's graduates have pursued careers in the health-related professions. Eighteen graduates have applied to medical technology programs and 89% have been accepted. Twenty-three graduates have applied to medical schools, including osteopathic medical schools, and twenty have been accepted on first application. Two were accepted on later applications and the third was accepted into a graduate program in pharmacology. A sprinkling of students have applied to advanced study programs in pharmacy, physical ltherapy, veterinary medicine, chiropractic, optometry, and dentistry. A very high percentage, i.e., over 90% have been accepted.

Allowing for some double counting with the above categories, there have been thirty graduates with a chemistry major, and twenty-one (70%) have gone on for advanced study including ten to graduate schools in the sciences. The remaining graduates have accepted positions in teaching or industry. There haved been nineteen graduates with a physics major of whom 42% went on for advanced study and eighty-six biology graduates of whom 49% went on for advanced study including eleven who attended graduate schools in the sciences.

Of the eleven students finishing this spring with majors in the sciences, four of the five applicants to medical technology schools have already been accepted. One student has been accepted into the graduate pharmacology program at Nebraska. Two are awaiting a decision from medical schools. One has been accepted at dental school, and one has been accepted into the physician's assistant program at Nebraska. Three have been accepted into pharmacy programs at Iowa and Creighton. All indications are that this will be another good year for the placement of our graduates in the sciences.

As you see the Morningside tradition of preparing strong graduates in the sciences continues. The College is proud of its alumni and is pleased to report their successes.

By the way, if you know of some youngsters who are good students and interested in careers in the sciences or applied sciences, why not suggest that they enroll at Morningside. A strong recommendation from an alumnus carries considerable weight with a prospective student. □

Chemistry Department Purchase

The Chemistry Department has just purchased a number of instruments from St. Joseph's Hospital clinical laboratory in Sioux City. The laboratory was being closed down to make way for the new Marian Health Center laboratories. Included in the purchase were an atomic absorption spectrophotometer, a Dade scintilation counter, a Turner fluorometer, a densitometer, two Coleman Junior spectrophometers, several recorders, and numerous other supply items. The purchase was arranged by Dr. William Yockey, chair of the Chemistry Department, who works as a consultant in the hospital laboratories. Says Dr. Yockey, the equipment although used is a very valuable addition to the instrument holdings of the department. A number of the instruments have already been integrated into chemistry laboratory experiments this semester, especially in Instrumental Methods and Biochemistry. □

Misusing Science To 'Prove' Religion

Proponents of Creationism have opened up a nationwide debate that has the potential to dramatically affect the teaching of science in public schools in this country. Already some publishers have bowed to the pressure associated with the creationist controversy and have deleted mention to evolution from their high school biology texts. In Iowa the Iowa Academy of Science has strongly supported the teaching of evolution and has openly opposed the introduction of creationism, as sectarian religious doctrine posing as science, into public school science classes. A major session on "Evolution and Creationism" was a part of the April 1983 Academy meeting at Luther College, and Academy members have been active in explaining the creationist/evolution controversy to the state legislature.

The article below on creationism was written by Dr. R. Franklin Terry, Academic Dean and Vice President for Academic Affairs at the College, and appeared in the November 7, 1982, issue of the Des Moines Register.

The continuing debate over whether "creation science" should be taught alongside evolution in the public schools has emphasized questions of consitution law and the secular nature of public education. These are crucial issues for a society founded upon the notion that the state shall not "establish" religion in the form of prescribed belief or ritual.

Of equal importance are several matters relating to the differences between science and religion, between the never-ending search for truth and the perennial effort to ground life in some ultimate meaning. As an educator and theologian, I am concerned about the distinctive claims and methodologies of both science and religion, as well as the vital connections between them.

Devotees of creationism insist that the book of Genesis presents a literal account of the beginnings of the world, arguing that creation took place in six days of 24 hours each about 10,000 years ago, and that nothing existed prior to Yahweh's spontaneous generation of all things. "Creation science" claims that all of this can be verified scientifically.

The theory of evolution, on the other hand, has little to say about the beginnings of the universe or planet Earth. Charles Darwin wanted to know how plants and animals came to be. From his extensive investigations of living things and ancient fossils he formed the general notion that present forms of life, including *homo sapiens*, had emerged through millions of years of biological selectivity and sophistication.

To insist that creationism be taught in public schools so that students will have a choice of views on these matters is an argument based upon several confusions regarding both religion and science.

First of all, creationism begins with answers rather than questions; it begins with the dogma of scriptural inerrancy bolstering narrow interpretations of biblical accounts of creation and "scientific facts." The methods of learning in this approach not only run contrary to those of scientific inquiry but raise many questions about the use of scripture as a substitute for biology, anthropology and history.

The dogma of inerrancy, for example, does not tell us *which* story of creation in Genesis we are to take literally. Genesis 1:1-2:3 presents the "six-day" account culminating with the creation of humankind as male and female. In this story, human beings seems to be the last and best of God's several creative acts.

A second story is found in Genesis 2:3-24, which reverses the first sequence and begins with the creation of man "when no plant of the field was yet in the earth," concluding with the creation of woman.

Are we to believe, then, that human beings are the final work in creation, or first in the series of God's creative priorities? Were male and female brought into being simultaneously, as in the first account, or is the female derivative of the male, as in the second?

Those taking a literal-minded view of holy writ often claim that, long before modernism had worked its skeptical mischief, the teachings of scripture were taken to mean "what they say." History offers little support for this notion. Writing in the early 3rd century of the Christian era, the theologian Origen of Alexandria reflected upon the meaning of biblical stories that people mistook for literal truths.

"Now what man of intelligence," he wrote, "will believe that the first and the second and the third day, and the evening and the morning existed without the sun and moon and stars? . . . And who is so silly as to believe that God, after the manner of a farmer, 'planted a paradise eastward in Eden,' and set in it a visible and palpable 'tree of life' of such a sort that anyone who tasted its fruit with his bodily teeth would gain life?

"And when God is said to 'walk in the paradise in the cool of the day' and Adam to hide himself behind a tree, I do not think anyone will doubt that these are figurative expressions that indicate certain mysteries through a semblance of history and not through actual events."

There is a second problem with the effort to put creationism in the public-school curriculum. Besides ascribing unambiguous, dogmatic truths to the Bible that the Bible does not seem to accommodate, there is a confusion about the uses of science to "verify" revelation. This is a curious maneuver by those claiming that God's words recorded in the Bible tell the truth on their own authority. What happens to the certainties of biblical fundamentalism if science is needed to lend them credibility?

Furthermore, the use of science to "prove" religious dogma betrays an enormous misunderstanding of the scientific method. Scientists are uncomfortable with notions of "final truth," since they are mainly searchers rather than answerers. While applications of scientific theory often bring astonishing results, ranging from cures for diseases to moon landings, the true scientist is one who presses beyond what is known in a continuing search for understanding and wisdom.

In this, science and religion share a common sense of what St. Augustine called "faith in search of understanding." Augustine linked the mind's quest for knowledge to the human spirit's ceaseless effort to find rest in God.

In our time, Albert Einstein insisted that both science and religion are rooted in the same awesome reverence before the mystery of the universe. "To know that what is impenetrable to us really exists," he wrote, "manifesting itself as the highest wisdom and the most radiant beauty which our dull faculties can comprehend only in their most primitive forms — this knowledge, this feeling is at the center of true religiousness."

What we must aspire to in education — as the root meaning of the word suggests — is to awaken and draw out the curiosity and imagination of our students rather than drill them with Truth. To install religious dogma in the curriculum of the public schools under the guise of "equal time" is not only unconstitutional; it is antithetical to the very nature of scientific and religious wisdom, and contrary to the spirit of education.

New Windows in Jones Hall

Jones Science Hall has just received a face lift. As a part of a College-wide plan to improve the energy efficiency of its buildings, new energy efficient windows have been installed all throughout Jones Hall. The new double-paned windows have about 40% of the window area of the old single-paned windows with the top 60% being insulated and covered with panels. The improvement in the building goes beyond energy savings. The new windows are handsomely finished inside and out and add substantially to the appearance of the building. Also, as part of the project old window air conditioners have been replaced with the newer more efficient air conditioners.

Cecil Larson, Vice President for Business Affairs, estimates that the total project costs about $65,000, but the energy audit that was a part of the project predicts that energy savings over a 3-4 year period will pay for the windows.

New Computer Science Majors

Last May Morningside College approved offering two new majors in the Department of Mathematical Sciences. These are a Computer Science Major with a Mathematics Applications Emphasis and a Computer Science Major with a Business Applications Emphasis.

Nationally, all the colleges and universities produce only about one-half the needed computer scientists each year. This is expected to continue to be true over the next decade. Morningside is now helping to meet this national need. Within four years, we expect to be graduating more than thirty computer science majors a year.

This program would not have been possible without some federal funding through the S.D.I.P. Office. We have had two more external consultants visit us in the last month to help us strengthen the new majors. These majors both are built within a liberal arts framework as we believe this is essential in preparing our students for their careers.

Our majors will have a strong emphasis on analyzing and developing systems which utilize computers. Thus, they will be prepared — although probably starting as programmers — to move into these managerial positions. This is very important as the two-year college graduate in programming will find that by the mid 1990's the demand for programmers will be drastically reduced. A liberal arts degree with a computer science major emphasizing systems design will prepare our students for decades of growth and change.

Our program is still developing, but the upper level courses outside of the systems area that we currently offer are: Computer Systems, Data Structures, File Processing, Discrete Structures, Numerical Analysis, Programming Languages, Computer Architecture, and Symbolic Language. In addition, we have already initiated internships and hope that they will play an important part in the program for our better majors in their senior year. □

You Can Help Too!

Many Morningside Alumni work for companies that have instrumentation which is no longer used but which is still in good working order. The science departments at the College in particular need various instruments that are simply beyond our present budgets in these inflationary times.

Perhaps your company would consider the donation of an instrument in return for our good will and a handsome tax write-off. Instrumentation and equipment that we could use includes: recorders, water baths, atomic absorption spectrophotometers, gas chromatographs, high pressure liquid chromatographs, oscilloscopes, microscopes, etc. Contact Dr. Edward Shane, Chemistry Department or Mr. Thomas Trevathan, Director of Development if you would like to pursue such a donation.

Green (Con't. from front)

best foundation for the achievement of personal and professional goals.

Dr. Green's main hobby is amateur radio; he holds a general-class ham license and a first-class commercial license. But even in his leisure activities his students come into the picture. Bob reflects on two former students with whom he often met for lunch to review the questions for the FCC examination for which the students were preparing. They passed. One is now in public school education and is the manager of the public school FM radio station in Omaha, and the other is an employee of the FCC in Washington.

To this day Dr. Green stays in touch with former students, several of whom are now college professors themselves. An indication of the closeness of these ties is the annual Christmas time physics student gathering at the Green's home. Often twenty to thirty graduates return to Sioux City for an evening of reflection on their time at Morningside and reporting on their current activities. No doubt the stories still circulate of that group of pesky physics students who kept rigging Bob's car with an ignition 'bomb' or the group of students who helped rebuild the basement wall of the Green's house after it collapsed in the aftermath of a heavy rain.

The college is pleased to recognize a favorite son, Robert Green. His commitment to teaching excellence and his concern for his students exemplify the finest traits of a college professor and set a fitting example for Morningside's faculty in 1983. □

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