

A brief chronological history of the Woodward Fund
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October 2000

I. The Woodward Bequest

1957 Henry Teynham Woodward, only child of H. Teynham and Marie Woodward, received an M.S. Degree in Mathematics from SJSU.

1984 Henry Teynham Woodward, who worked as a researcher at NASA, died unexpectedly without issue, survived by his mother, various cousins, aunts, and uncles.

1986 Mrs. Marie Woodward died, leaving various real properties to nieces and a sister and various sums of money and other properties to cousins, sister, brother-in-law, nieces, nephews, a church, and the Humane Society.

The remainder of the estate was split 50/50 between UCB and SJSU. The money Mrs. Woodward gave to Berkeley was to the Chemical Engineering Dept. in memory of her husband, for research on the desalinization of water. Her gift to SJSU was to the "Applied Mathematics Department at San Jose State University in the name of my son, Henry T. Woodward, for research on the atmosphere of Venus."

With the final probate settlement, SJSU received a total of about \$600,000.

1987 SJSU clearly designates the Department of Mathematics and Computer Science as the recipient of the money because Henry T. Woodward was an alumnus of that Department, that department is the only mathematics department at SJSU, and that department has taught and continues to teach a wide variety of applied math courses.

Professor Veril Phillips, Chair of Math/CS, consulted with and met with a variety of people in order to formulate plans for using the money in a way consistent with the intention of the will.

Among the people consulted:

Prof. Jane Day, Math/CS Department, Director of the Center of Applied Math and Computer Science at SJSU.

Prof. Pat Hamill, SJSU Physics

Prof. Les Foster, applied mathematician, SJSU Math/CS

Prof. Howard Swann, applied mathematician, SJSU Math/CS

Prof. Hedley Morris, applied mathematician, SJSU Math/CS

Dr. Pat Cassen NASA/AMES

Audrey Summers, NASA/AMES, honored graduate of the SJSU Math Dept and friend of Henry T. Woodward

Prof. Pete Lester, SJSU Meteorology

Dr. Bob Haberle, NASA/AMES

Dr. Dave Brocker, NASA/AMES

Dr. Tom Ackerman, NASA/AMES

Dr. Jim Young, NASA/AMES

Dr. Jim Kasting, NASA/AMES

Prof. Marty Billik, SJSU Math/CS

Prof. Vladimir Naroditsky, applied mathematician, SJSU Math/CS

Prof. John Mitchem, SJSU Math/CS

Prof. Richard Pfeifer, SJSU Math/CS

1987 After completing the consultation explained above, there was general broad general agreement that mathematics applicable to the atmosphere of Venus is the same mathematics that is applicable to atmospheres in general. Such mathematics includes, among other topics, numerical analysis (i.e. the mathematics of efficiently and practically using computers to solve applied mathematics problems), partial differential equations, fluid flow problems, inverse

problems, wave equations. In a memo to Science Dean Lange dated August 11 (copy attached), Chair Phillips outlined procedures for using these Woodward Funds:

(1) Monies of the bequest should "usually" be held in endowment, with the use of earnings decided annually.

(2) The annual decision should be made by the Math/CS Department Chair, in consultation with the Faculty Steering Committee of the Center for Applications in Mathematics and Computer Science, and approved by the School Dean.

(3) Whenever the decision is made to partially endow a chair for up to two years, a national search should be conducted. The appointment should be made upon recommendation(s) from the Department Recruitment Committee, as for initial probationary appointments. Incumbent SJSU faculty (not serving on the Recruitment Committee) would be eligible for appointment.

(4) Guidelines should be developed for determining conditions under which the principal could be partially or fully withdrawn. These guidelines should have the approval of the Department Chair, the School Dean, and (if advisable) the President, before any principal is disbursed."

From **1987 until 1990** Woodward estate attorney Donald J. Kennedy and executor Alfred T. Davenport were kept informed of the uses of the Woodward money and did not question the uses at all. According to Kennedy, each of them "donated what could have been substantial extraordinary fees for the benefit of the two Universities who were the residuary legatees." They felt their gift "will ultimately help these two great institutions to carry out the expressed intentions of Marie Woodward." Knowing our use of the money, they not only did not question it, they gave their implied approval to the uses we made of it. See attached letters from and to Mr. Kennedy.

Since the guidelines (1)-(4) of August 11, 1987 above were drawn, about **\$162,000** of Woodward earnings have been used for **research** through the Center for Applied Mathematics and Computer Science (CAMCOS) and for **three Woodward conferences**. The research money has paid salary and benefits for researchers and has been used to buy computing equipment necessary for the research. See details in Section II below. At times, various large projects which would possibly use all of the accumulated earnings and some or all of the principal have been discussed. Each of these projects eventually fell through for reasons external to the Math/CS Department, so (4) has not been done. Partially endowing a Chair in Applied Mathematics as in (3) will require a much larger endowment so that idea was and is viewed as a possible future use of the Woodward fund.

II. Woodward Fund Expenditures

1988 May \$7500 of Woodward money was used for a summer extension of a CAMCOS Project, whose purpose was to study **numerical instability in an atmospheric problem**, directed by Professor Hedley Morris.

1988 June \$860 of Woodward money was used for **The First Woodward Conference (on wave phenomena)**, which was held June 2-3 at San Jose State University. The proceedings were published by Springer Verlag.

1988-89 \$30,550 of Woodward money used to continue the study **numerical instability in an atmospheric problem**, directed by Hedley Morris.

1989 \$10000 was used to support an **applied mathematics project** of Prof. Kwok, of the Math/CS Department.

1989 \$2567 supported **The Second Woodward Conference, Nonlinear Structures in Physical Systems: Pattern Formation, Chaos, and Waves**. Proceedings published by Springer Verlag.

1990 \$8000 spent for an IBM Workstation for use by **CAMCOS**.

1991 \$1690 supported the **Third Woodward Conference**.

1992-93 \$32,676 spent for salary and fringe benefits for **CAMCOS Director**.

1993-94 \$13,655 spent for computer hardware and software in support for CAMCOS Project, **Doppler Shift Estimation and Correction for the NASA/SETI Project**, directed by Professor David Motte of the Math/CS Department.

1990-2000 Various large scale plans for using a substantial part of the Woodward funds, possibly including all or part of the principal were considered, some very briefly. Most of the considered uses were part of a larger plan which did not come to fruition, so consideration of the Woodward use became vacuous. Among the ideas considered were: a graduate research facility on the first floor of MacQuarrie Hall, a dedicated computer lab for applied mathematics, purchasing or supporting a supercomputer, and creating an applied mathematics center on a floor in the weather station that USGS was considering building at SJSU. If any such facility ever becomes reality, it would be given the Woodward name, and an appropriate plaque honoring our alumnus, Henry T. Woodward, would be installed. However, space for such facilities has not become available; USGS eventually abandoned its plan to construct a building on the SJSU campus, and plans for enclosing space on the first floor of MacQuarrie Hall are stalled, waiting an Environmental Impact Report.

1995 \$2000 transferred to **Research Development Account**

1996 Spring and Summer \$32,000 for Professor Jackson's CAMCOS project with NASA/AMES on **Efficient Scheduling of Jobs for the VonNeumann Supercomputer**.

1996-97 \$20,691 for **computing equipment** which was used in a CAMCOS project sponsored by the **Electric Power Research Institute** and directed by Professor Rudy Rucker.

1997-2000 No use was made of Woodward funds during these years. Enrollments in undergraduate and graduate computer science exploded during this time, and the curriculum in computer science continued to need updating at an ever increasing pace. The Math/CS Department Chair and faculty were stretched too thin to keep CAMCOS active and thriving.

2001 Fall CAMCOS has a new enthusiastic and energetic Director, Professor Tim Hsu. During Fall 2001 he found scientists at NASA-Ames who are very interested in having CAMCOS teams work on some of their problems, but at this time they do not have funds to support such projects. However, projects involving atmospheric studies would be appropriate for Woodward support, and we hope to initiate two such projects in Spring 2002.