PROVOST'S INSTRUCTIONAL DEVELOPMENT FUND

Application for Funding of Consultant Costs

Submitted by: Douglas B. Meade Date: 28 September 1994

Position: Assistant Professor

College/Department: College of Science and Mathematics, Department of Mathematics

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Departmental account for funds to be transferred to: 13060 A000

Description of Activities Proposed for Funding (Attach documentation of consultant's credentials):

Provide for campus visits by two experts in the use of technology in the teaching of mathematics: Professors Robert Lopez (Rose-Hulman Institute of Technology) and Steven Dunbar (University of Nebraska, Lincoln).

Proposed activities during these visits include:

- an interdisciplinary seminar on the educational applications of computer algebra,
- guest lecturer in a class (probably in Math 242),
- talk for students sponsored by the USC Math Club and Pi Mu Epsilon (mathematics honorary),
- colloquium in the Department of Mathematics,
- consult with faculty and graduate students on the use of the computer as a teaching tool.

The consultants have been selected on the basis of their experience in the effective use of computer algebra in a wide range of mathematics courses as well as their diverse institutional backgrounds. See the attached sheets for further documentation of their credentials.

Description of Potential Impact on Teaching:

Interest at USC in the use of technology as an educational tool has increased substantially in recent years. Two projects in the Mathematics Department are extensive reform of the first-year Calculus courses (Math 141 and 142), initiated by Howard, Miller and O'Leary, and the updating of the differential equations course for engineers (Math 242) which is the Lilly Foundation funded project of Meade and White (Chemical Engineering). The proposed activities are coordinated with these projects, and are designed to encourage consideration of similar ideas by more faculty, in additional courses, and in other departments.

Specific benefits expected from the consultants' visits include the interdisciplinary discussion of pedagogical and curricular issues, sharing of effective teaching techniques, and an exchange of ideas related to the design and utilization of classroom and laboratory resources. An additional benefit will be to provide faculty with first-hand exposure to current trends in education reform.

Description of Planned Follow-up:

Beginning with the Spring 1995 semester, the Computer Algebra seminar will meet bi-weekly. The primary purpose of this seminar is to provide a support group for anyone interested in the use of computer algebra for teaching and/or research. Strong interest in this seminar has already been expressed from faculty and students (including a few undergraduates) from several departments (including Mathematics, Statistics, Chemical Engineering, Geology). This seminar will be a forum for the continued discussion, debate, and development of the seeds planted by the consultants.

Estimated Costs:

Consultant Fee	\$500	(\$250 each)
Airfare/Mileage	900	
Hotel	300	(\$50/night for 5 nights)
Meals	208	(\$32/day for 6.5 days)
TOTAL	\$1,908	

Amount Requested: \$1,500

Support above the limits for this proposal has been requested from the Department of Mathematics colloquium budget (Temlyakov), Pi Mu Epsilon (faculty advisor: Girardi), and the College of Science and Mathematics (Dean Jerry Odom). In addition, about \$100 can be available from the Lilly Foundation grant held by Meade and White (Chemical Engineering).