

**Engineering Student Technology Committee
Technology Fee Project Proposal**

Must be submitted on or before February 9, 2001

Please use this form to request technology fee expenditures for equipment in classrooms, computer laboratories, or other instructional or research laboratories, in keeping with the State Board of Agriculture Charges for Technology Manual guidelines found at <http://www.colostate.edu/services/acns/itec/fee.html>. Technology committee members are available for assistance, the names of whom appear in Section IV. Also see Section IV for submission information.

Section I. Overview

1. Title of proposal

Wireless Communication Channel Modeling & Wireless System Design

2. Submitted by (Name & contact information of primary submitter(s) – up to three)

Carl R. Nassar 1-6018

3. Proposal supported by*

Department of ECE

* Proposals with wide-spread support from a cross-section of the college will be given preference. Although this form may be submitted electronically with a list of supporters, actual signatures are required for all supporters beyond the original submitter(s).

4. This project request is

- for student wages
- for software
- to maintain and/or upgrade existing facilities (replacement equipment only requested)
- to augment and maintain existing facilities (some new equipment requested)
- ★ to provide a new facility (all new equipment requested)

5. Brief summary of proposal (Please limit answer to no more than one paragraph)

This proposal will purchase a powerful software simulator capable of modeling the outdoor wireless telecommunication environment, which in turn enables accurate construction of wireless communication systems.

6. Location for proposed equipment or software:

ECE Lab with frequent access by ECE undergrads and grads

6a. Equipment/Software requested (complete only if proposal is for equipment and/or software):

Specific equipment needed	Number Requested	Unit Cost	Total Cost
Specific software needed	Number Requested	Unit Cost	Total Cost
SMRCIM Urban/Microcell RF Channel Modeling Tool	1	\$2 795	\$2 795

Total cost: \$2 795

Section II. Pedagogical considerations

1. What are the pedagogical goals of this proposal? (Please limit answer to no more than three paragraphs)

This software simulator will be used by students to simulate (and hence better understand) the wireless telecommunication channel. In a world going wireless, this very important simulation (and understanding) will now become available to our ECE students.

2. Why is the request appropriate for the goals stated in #1, above?

(complete only if proposal is for equipment and/or software):

It is the most powerful software available to simulate wireless communication channels. The university currently has no such software capabilities.

3. Planned course/research benefit:

<u>Course No./Research projects</u>	<u>Number of students affected/semester</u>
EE524	30
EE401/402	5
EE422	8

4. How will this proposal improve instruction (specific lessons, experiments, exercises affected, etc.)?

(Please limit answer to no more than three paragraphs)

- a. This software simulator will be integrated into the classroom through demonstration. That is, the instructor will run the simulator, and students will be shown the results of the wireless channel simulator. This will enhance their understanding of wireless channels.
- b. Students will receive assignments in which they are required to use the simulator to model real-world wireless channels.
- c. Students will be able to use this resource significantly enhance senior design projects in the area of telecommunications.

Section III. Operation, Maintenance, and Funding

1. What functionality will this equipment provide that is not already available elsewhere in the college?

Everything that this software tool supports is new to the university.

2. How many hours per week (M-F, between 7am and midnight) will this equipment be accessible for general student use? (complete only if proposal is for equipment and/or software)

It will be available the entire time the labs are open

3. How will students be made aware of this project? (complete only if proposal is for equipment and/or software)

It will be announced in the appropriate classes.

4. Complete either A or B:

A. If this request is for student employee wages, who will be the supervisor of those students?
(the supervisor must sign here if name does not appear in Section I, #2 or #3)

B. If this request is not for student employee wages, who will be responsible for oversight and any installation, ongoing maintenance, or repair for this project?
(the responsible party must sign here if name does not appear in Section I, #2 or #3)

ENS staff will be asked to install the software onto the computer system. No additional maintenance is expected.

5. What operation & maintenance services would be needed from ENS staff? from department staff?

ENS staff will be asked to install the software onto the computer system.

6. What modifications of current space will be necessary to install the new equipment (remodeling, wiring, security, furniture, etc.) and what is the source of funding for those modifications?

None.

7. What is the estimated cost of operational expenses (supplies, maintenance, supervision, student assistance, etc.) and how will those expenses be funded?

N/A.

8. What other sources of funding (and how much) exist for this project (outside grants, equipment donations, reallocation of existing equipment, etc.)?

None.

9. What attempts have been made to obtain the funding from other sources?

N/A