



Oklahoma Center for the Advancement of Science and Technology

**Oklahoma Applied Research Support  
(OARS)**

**(OARS) R&D Faculty and Student Intern Partnerships**

**Reviewer Comment Summaries**

**August 1, 2008**

## **I. Background and Introduction**

OARS Faculty and Student Intern Partnership program awards are made based on external reviewer recommendations to the Oklahoma Science and Technology Research and Development (OSTRaD) Board. A majority of the reviewers for a competition must reside outside of Oklahoma. The OARS Committee selects the reviewers and they are recognized achievers in the academic and business communities as well as in their discipline. Proposals are sent to two primary reviewers and they prepare their comments off site, the reviewers then meet in Oklahoma as a panel to rank the proposals and make their recommendations. The reviewers select the best proposals based on their judgment as to the most cost effective programs that bring the most benefits to Oklahoma undergraduate students. Applicants must remember they are showing a review team their program has a very high chance of success at a minimum cost to the state of Oklahoma. Proposals not in the required format, proposals that are hand written, proposals that lack the required information, and proposals showing no commitment to the students will rank low or may not be approved for funding.

## **II. Reviewer Proposal Evaluation**

The items used for the FY08.2 competition proposal evaluation are reproduced in the next section. The items may change for future competitions; however, the reviewer comments should be helpful. The reviewer comments are grouped by Competitive and not-Competitive proposals for each item or groups of items.

Reviewers' come to the panel discussion with their proposals scored. During the discussion the panel members gain insight from the comments of other reviewers and a group of ranked proposals for funding and proposals not approved for funding is created. These recommendations are presented to the OSTRaD Board ranked exactly as prepared by the reviewers. Board approved proposals are then funded in rank order until the available funds are exhausted.

### **III. Reviewer Comments**

The comments have been taken from several reviews and rewritten to remove the identity of the applicant organization. The headings are those given to the reviewers for comment.

#### **A. PROPOSAL EVALUATION CRITERIA: THE UNDERGRADUATE or FACULTY INTERN EXPERIENCE**

- the potential effectiveness of plan for obtaining a pool of undergraduate intern candidates.
- the adequacy of plan for selecting and assigning interns.

#### **Competitive Proposals**

Excellent pool of undergraduate students is available at the college. This is the best plan of intern recruitment that this reviewer has seen.

There appears to be a plan in place for selecting top student interns for the program. The students will be recruited by the P.I. and then critically interviewed at the company for final selection.

There is a general discussion about the plan for recruiting and selecting the interns, but more details could have been included. The main details could have been around how the pool would be obtained (flyers, student organizations, etc.), and any formal interview plans.

There is a good plan for obtaining a satisfactory pool of candidate students and then selecting the most appropriate for the program.

The faculty intern has made an excellent presentation of the benefits of this program to him.

#### **Non-Competitive Proposals**

There is no clear description of the development of an internship program coming from an appropriate student population base except for the mention that the P.I. will work with an internship coordinator at a college.

The only mention of where the students will come from is in the budget travel justification.

The plans for developing an internship program needs to be made much more explicit in the abstract, commitment of support from the college (missing) and the project plan.

There should be more detail put into the selection process for the interns: how will the intern pool be pulled together (fliers at the university, professionals groups, etc.), who will sort the pool and make decisions about interviews, and who will make the hiring decisions.

There is almost no discussion of the plan for obtaining a pool of undergraduate students and selecting the person for the intern program.

The faculty intern appears to be an afterthought since no details are provided.

- the suitability of applied R&D research facility for a positive undergraduate intern experience.
- the adequacy of equipment available for interns to use

### **Competitive Proposals**

The company is vibrant with adequate resources.

The interns should learn valuable lessons in project management and the challenges of balancing the technical and business aspects of a project.

There is an excellent opportunity for interns to experience and learn professional workplace attitudes.

It appears that the interns will enjoy some intensive real-world experiences and have the opportunity to help their school, help the firms, further their education and expand their career options.

The proposed intern program should provide a very good experience for the undergraduate interns. The students will be on-site with both of the industry partners, which should provide excellent opportunities for the students to pick-up workplace experiences.

The facilities at the company will provide the interns with a very good learning experience. The work environment at the company should give the interns an opportunity to learn about the “real world” engineering work place.

### **Non-Competitive Proposals**

All of the research work would be conducted at the university so the undergraduate student would not gain the workplace skills that may be present in an off campus assignment.

Overall, this proposal is lacking in sufficient detail to allow a critical review of the internship program.

There may well be the potential for a good internship program at the company, but this is not clear from what was written.

The student intern should be immersed in the business environment and not work from home. The students should also be working on R & D and this should be clearly distinguished from the situation where the student is merely helping to write the next few hundred lines of code.

It is not made clear what the overall size of the business environment that interns will experience is. If there are interactions with a group of other employees at the worksite this should not be an issue.

The current proposal is lacking in details in a number of areas.

The research would be carried out on the university campus and it is unclear how the current proposal would provide experiences for the faculty intern and student intern any different from a normal college curriculum.

It is unclear from the proposal what each of the different types of interns will be doing, for example what are the typical tasks of the programmer interns.

There should be more specifics about the work tasks and responsibilities for all of the interns.

The interns should have good experiences working on real-world projects.

While there are state-of-the-art facilities available at the college to carry out the work, less than half of the work will be carried out at the company facility. It seems from the structure shown in the proposal that most of the student interaction will be with the faculty instead of the research mentor.

It is unclear in the proposal what the exact benefit of the project for the faculty intern will be. While the intern will be working on an industry problem, there does not seem to be unique skills or equipment at the company that will improve the faculty member's skills or knowledge.

The proposed project would be of little benefit to the undergraduate intern since the work would not be conducted in a place of business. There would be little opportunity for the student to interact with anyone other than the research mentor who is a college faculty member.

This project offers the opportunity for student and faculty interns to familiarize themselves with an exciting phenomenon in operating system development and use.

I am concerned that the students may not have an adequate level of web development skills since no web design/development courses or experience are required. I think the project requirements will be too great for an intern to accomplish without previous mastery of at least a basic level of these skills prior to the internship.

The proposal talks about designing, developing and implementing web-based reporting solutions, but does not describe the reports in adequate detail. Though it is not mentioned, it seems as if it would be necessary to perform a systems analysis to determine the system requirements for the reports. No mention is made of design activities.

The description of the intern activities is not sufficient and confusing.

- the experience of Principal Investigator for managing undergraduate internship program and the suitability of the R&D mentor or mentors for working directly with undergraduate interns.

### **Competitive Proposals**

The P.I.'s varied experience is well suited for managing this type of project. Mentor appears to have some experience with junior personnel training and oversight, but this is not described well in his biographical information. He appears to have been an important part of the employee development at the company.

It would appear that one of the P.I.'s primary tasks is to mentor students and faculty in this area of software development and to develop outreach internship programs in this area. The mentor has had extensive experience with mentoring interns and he certainly has trained numerous personnel.

The P.I. does not have experience with OCAST grants but has extensive experience with mentoring undergraduates whereas the company mentor has extensive experience in mentoring.

The P.I. and the research mentors have the experiences to interact and direct the work of the interns.

The P.I. and the research mentors will make the experience for the students a positive one.

There have been interns employed at the company in the past that should be of benefit on this project.

### **Non-Competitive Proposals**

The company mentor/PI is an entrepreneur who is interested in working with the interns. The role of the college professor is vague and not clear to this reviewer.

The P.I., the mentor and the faculty intern are the same person, it is unclear how there will be any exchange of technical knowledge in the program. The undergraduate intern is only a minor player in the proposal with 4 hours per week support requested.

The P.I. appears to have no experience or credentials for managing an internship program. This is where a partner at the college could help by serving as a co-P.I.

Will the P.I./mentor be the person actually interfacing with the interns on a daily basis since he is the CEO of the company? Even though the company is small it is not clear that the CEO will (for example) work with the R&D intern on the details of the project. If others will do the daily work then they should be identified in the proposal.

Due to the lack of specifics about the tasks of the interns it is hard to make a determination about the suitability of the P.I./mentor to work with the students.

It is not clear how the program would benefit the faculty intern since he is the research mentor. In this program faculty members work under the direction of an applied research mentor.

- the potential effectiveness of the undergraduate intern report writing process and the potential for intern(s) to learn work place skills and work place attitudes.

### **Competitive Proposals**

A good report writing process is described. It would be nice to see the students presenting some of the work at regional meetings (if appropriate meetings are held within the state), possibly in the form of a poster presentation.

A meaningful report writing process is in place. It would be nice if the students had opportunities to present their work in some sort of public forum at the college or at local meetings.

A meaningful report writing process appears to be lacking and it is not clear that the students will have any opportunities to present their work in a public forum.

There is a good plan for intern monitoring and reporting.

The plan could be improved with a formal plan for work performance reviews with the mentors and also some oral presentations planned for the interns as well as written reports. These will most likely occur on an informal basis but a formal plan would add to the proposal.

There is a well laid out plan for written and oral reporting of work progress that should improve the interns' communications skills.

## **Non-Competitive Proposals**

It is not clear what kind of report writing there will be for the student to summarize his/her experience or what kind of follow-up there will be.

There should also be more information about the intern reporting process, what is the frequency, oral vs. written, and how will they be tracked.

There is a monthly reporting plan describe for the students, but the program could be improved with a plan for work performance reviews and oral presentation opportunities for the students.

Neither the P.I. nor the industrial mentor roles include the responsibility of providing feedback to the students on their work performance. The only feedback mentioned relates to the monthly report. I would think that feedback on the actual project work would be a very important part of any internship program.

- the evaluation plan, including the evaluation instruments
- the tracking plan

## **Competitive Proposals**

The plan shows much thought and should assist the student mature as an engineer.

The evaluation plan for the student intern is excellent; the leadership team is commended for designing a through evaluation instrument for the faculty intern.

## **Non-Competitive Proposals**

The evaluation plan shows little thought has been given to assisting the intern gain workplace strengths.

There is no tracking plan. This proposal should not have been sent for review.

## **B. PROPOSAL EVALUATION CRITERIA:**

### **COMMITMENT OF RESOURCES/APPROPRIATENESS OF THE BUDGET**

- the commitment of lead applicant institution and partnering organizations as demonstrated by resources and facilities dedicated to undergraduate internship.
- the plans to continue the internship program beyond this project.
- the appropriateness of the budget as well as the source and quality of match.

## **Competitive Proposals**

Only about sixty percent of the budget goes to the intern salaries. About thirty percent of the OCAST funds are requested to go toward the mentor's salary. Although the project could work well with OCAST support with the budget described, it would be better to have more of the overall budget going towards the interns' salary (greater than 80%) so that more interns could be supported. *[note: the reviewers revised the budget of this program]*

There is clearly a strong interest in continuing and supporting these projects at the college.

Both the mentor and the P.I. have had previous successful OCAST support and the P.I. has definite plans for continuation of this type of program.

About 80% of the budget goes to the interns. It is unclear why the mentor requires that any of his salary be covered by OCAST funding. The mentor's salary should be a part of the match and so should be cut from the requested OCAST contribution. The salary request for the P.I. is also unusually high for this type of program and it is recommended that the OCAST contribution be cut by 50%. Also, it will likely be difficult to incorporate so many new interns at the company immediately and put them into productive environments, so the number of requested interns should be reduced. *[note: the budget of this program was reduced by the reviewers]*

One hundred percent of the OCAST funds go toward interns' salaries and all of the match is in the form of cash and goes to intern salaries.

The mentors have very good track record mentoring students.

Major commitment of resources, in term of equipment and personnel. There are explicit statements by the P.I. for plans of continuation.

Given that this is a new program it would be best to start it with fewer interns. In this way OCAST reviewers can monitor the progress of the program and recommend expansion in the future if this is warranted.

The budget is very straightforward and the match is in order. All of the OCAST funds and match are to be used for the intern salary.

There have been intern programs in the past at both partners and there seems to be a commitment to this type of program in the future.

There seems to be the right level of resources committed for the project. The budget seems to be in good shape. There could be more justification for the amount of time the P.I. will spend on the project. The amount of time P.I. will spend seems somewhat dependent upon the technical needs of the students. Overall everything seems to be in order.

The budget is designed well. All of the OCAST contribution goes to the direct benefit of the students and matching funds are in the form of cash reserves from the company.

## **Non-Competitive Proposals**

There is no match to the OCAST funding. The proposal seems to be an attempt at seed money for a research project with little focus on the intern part of the program.

There is a clear commitment from the company to host interns, but little evidence of a commitment to establish an internship program. The facilities are not well described and the students will apparently not have a need for them anyway as they will be working at home.

The match for the OCAST funds is almost all in the time of the P.I./mentor. There is only \$1000 going directly from the company to the interns. Also, the match from the company is for the CEO at an annualized burdened salary of over \$200,000. There should be more money from the company going to the support of the interns (OCAST funds are even buying computers for the students). All of these points call into question the commitment of the company to the intern program.

The match for the OCAST funding is entirely in the time of P.I. and mentors. The amount of time of the mentors (at 15% and 25%) for working with the interns has to be questioned. The mentors are planning to spend approximate half of the 20 hours per week that students are working in contact with the intern. A more reasonable number would seem to be 3 to 5 hours per week. The budget should be reviewed and some company funds being used for intern salaries should be considered.

The program seems to be a feasibility study for a new system structure for the company. It is unclear what the long-term plan for the project is (i.e. if certain goals are met the system will be put in place). So, while there are good commitments for the current proposal it is not discussed where the work will be taken or criteria for success. The budget and match seem to be in order. There is no discussion of plans for a future intern program.

There is no commitment from any organization to this work. There is no apparent match for the OCAST monies except for maybe time from the P.I., but even this is not justified or discussed in detail.

The P.I. and mentor are requesting excessive salary for the nature of this program. This program is designed to encourage companies to have undergraduate interns by OCAST paying a major portion of the intern salaries.

The intern pay rate appears low.

There is no clear indication that independent support is being sought, beyond the matching support from the company, to either extend or enlarge the program.

### **C. PROPOSAL EVALUATION CRITERIA: BENEFITS AND ECONOMIC GAIN**

- The potential for undergraduate interns to become acquainted with prospective employers, to be better prepared for the workforce and to be encouraged to pursue advanced degrees and/or careers in science and engineering.
- the potential for faculty interns to be updated in technical areas, apprised of workplace needs and acquainted with industry contacts for aid in student placement.
- the potential benefits to an institution of higher education, to an Oklahoma firm and possibly to an Oklahoma community or region.
- the value added by the program to an undergraduate instructional program in the subject areas represented by this proposal.

### **Competitive Proposals**

It is clear that this program will help the college program. The company will have access to well trained potential employees. The students are clearly being given a unique experience that should enhance the educational programs at the college in terms of attracting additional high-quality students and encouraging their pursuit of careers. However, it is not clear how the interns' effort contribute to the R & D success of the company since it seems that the protocols and strategies to be used have been in use well before the project began.

The company has a vested interest in attracting and retaining local talent. They will clearly benefit from this. The college program will gain visibility and the P.I. should gain valuable additional real-world experience in his area of expertise that will carry over into his departmental curriculum development.

An excellent case is made as to how the state, the university, the company and the interns will benefit from the proposed partnership.

The proposed program would be of a benefit to all parties involved. The students would gain work experience and be able to apply the principle that they are learning in class to their intern work in real-time. The industry partners would gain a better relationship with the university and also have the work that the interns do. Also, the experiences that the students bring in the instructional environment would benefit their classmates as well.

The proposal seems to have benefit for all parties involved. The interns will gain work experience to add in their education; the university will have the benefit of closer relations with a local company and the students bring the work experience into the class exercises; and the company will have direct work of the interns and visibility to future full-time employees.

The students and the company should benefit from the proposed program. The students would gain real-world work experience and direct application of their coursework in real-time. The interns may also gain some insight into whether graduate education may fit into their plans. The company would benefit from the direct work of the students and the chance to evaluate potential future employees.

## **Non-Competitive Proposals**

It is likely that the students will gain experience in the [research area], but it is less obvious that the interns will have adequate exposure to a corporate work environment that would give them the “real-world” experience typical of most other internship programs.

The focus is on the research instead of any benefit to the intern program participants. The P.I./mentor/faculty intern role that is outlined in the proposal seems to be a stretch for this OCAST funding program.

There are a number of areas of benefit for all parties in the proposal but there are concerns about how the workplace experiences will occur for the students. The students will work on real-world problems but it is not clear how much interaction will occur with the IT staff at the company over the course of the project.

The faculty intern only works part-time at the college.

There is little benefit for any of the parties involved other than the money. The undergraduate intern would not have the interactions with people that are required to have a successful intern experience. The faculty intern would be working for himself so it is unclear how this would aid in their career growth. Also, there would seem to be no benefit to university involvement.

This proposal offers a good opportunity for students to work with a well-established company with an interesting technological product.

The project description for the interns is not clear.

The faculty intern is a researcher and teaches a minimal number of undergraduate courses which are at the senior level. This reviewer does not see how the faculty internship will benefit the department's undergraduate program.