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DATE: December 9, 2008

TO: CVMBS Faculty

FROM: Dr. Ron Tjalkens, Chair 
College Research Council

Dr. Terry Nett 
Associate Dean for Research and Graduate Education

SUBJECT: Call for Research Proposals

PROPOSAL DEADLINE: 5:00 PM on Monday, March 23, 2009

I. GENERAL

The Research Council of the College of Veterinary Medicine and Biomedical Sciences solicits and evaluates research proposals for funding each year. *CRC funds are intended for use as seed monies to support faculty development by increasing competitiveness for extramural funding.* CRC encourages proposals by young investigators and discourages recurrent internal funding of long-standing projects when alternatives exist. **Please read the proposal guidelines carefully** and direct questions to Dr. Terry Nett, Associate Dean for Research and Graduate Education (terry.nett@colostate.edu) or to Dr. Ron Tjalkens, Chair of the CRC (Ron.Tjalkens@colostate.edu)

This year, approximately \$750,000 is available for support of excellent research projects. Funds for these projects are obtained from a variety of sources, USDA sources (Animal Health and Disease, Experiment Station, and other formulary return funds) account for approximately \$400,000 and the funds are linked to projects impacting food and fiber animals. Racing commission funds of approximately \$100,000 support equine research and funds from the Miki Society make approximately \$32,000 available for small animal research. In general, the smallest CRC awards have been in the \$3,000-\$5,000 range and the largest awards in the \$30,000 range. Average awards have been slightly less than \$20,000. As in past years, the Shared Research Program (SRP) will support important research projects without restriction of subject matter. Funding for SRP projects will be shared equally by the home Department and the Dean's Office. The College will provide approximately \$100,000 in matching funds. SRP grants will be submitted specifically for this program, and will require prior agreement of the Department Chair to share the costs of the research if funded. SRP proposals may not exceed \$20,000 (total) and the departmental match must come from RI, PVM or RA/RSP sources. If you are contemplating submitting an SRP proposal, please request approval from your department head prior to preparing the proposal.

Due to limited resources an individual may not submit more than ONE proposal as principal investigator (PI). Notification letters regarding funding will be sent out by the end of spring semester.

II. DEADLINES

The deadline for receipt of proposals together with progress reports, if appropriate, is **5:00 PM on Monday, March 23 2009**. Please submit **the original and two copies** of each proposal to Linda Tarnoff in the Dean's Office (W102 Anatomy Building). **LATE APPLICATIONS WILL NOT BE CONSIDERED.**

III. ELIGIBILITY OF PRINCIPAL INVESTIGATOR

All faculty members with a regular or special appointment are eligible to apply for support. Special consideration will be given to proposals from new faculty. The special consideration includes adding up to 10 bonus points to the evaluator's score if the new faculty member has been here less than three years and meets the criteria below. To be classified as a new faculty, the PI must hold the rank of Assistant Professor and have received less than \$50,000 (cumulative) in extramural research support as Principal Investigator (excluding NRSA and MCSDSA sources); if questions arise regarding classification of support, please contact the Associate Dean for Research and Graduate Education. If you have not had previous grant writing experience, it is recommended that you have a more senior member of your department or department chair review your proposal prior to submission. **General tips for writing your application are included as an Appendix to this document.** In addition, examples of highly ranked proposals from last year are available upon request. If you would like to examine a highly ranked proposal, contact the Associate Dean for Research and Graduate Education.

IV. PREPARATION OF PROPOSALS

Proposals must be prepared according to the format outlined below. Please submit **the original and two copies** of each proposal. Clear, direct, concise statements are encouraged. Proposals exceeding stated page limits will be rejected without review. Supporting documentation, such as abstracts, preprints or reprints, must be submitted as an appendix and are excluded from the page limitation.

The *Just in Time* policy will be in effect again this year for proposals requiring regulatory committee review or special authorization. Proposals that involve or utilize research animals, biohazards, human subjects, or Veterinary Teaching Hospital facilities will **not** be required to submit the respective forms with the grant proposal. Rather, if you have checked any of these categories and if the proposal is funded, you will be required to submit the appropriate ACUC, IBC, etc. forms or if necessary, to obtain certification from the Director for use of VTH facilities and resources. You will be contacted shortly after the decision has been made and provided a date by which the appropriate forms must be completed. These must be submitted directly to the appropriate regulatory committees, and one copy will be submitted to the Dean's Office.

Proposals will not be funded until regulatory compliance issues have been addressed. Some PIs may want to prepare the forms earlier. However, no Regulatory Committee forms will be submitted or required from a PI until funding is assured.

V. FORMAT FOR PROPOSALS

The proposals must be single-spaced, double-spaced between paragraphs, in letters no smaller than 12 cpi; margins must be ≥ 1 inch. Figures or tables must be of similar letter size. Avoid the use of dense fonts, which are difficult to read. **Please submit the original and two copies of the proposal.**

The limit for proposals is six (6) single-spaced pages, for items 3A to 3D inclusive. The scientific merit will be evaluated based on the six pages.

1. Complete face sheet and signature page.
2. A two page CV prepared using the NIH format
3. The proposal proper (**see Evaluation Criteria on Page 4**):
 - A. Statement of hypothesis, specific aims/objectives.
 - B. Background and Significance: the significance of the problem to be investigated, with literature citations and preliminary data if appropriate.
 - C. Research Design and Methods: rationale, experimental design and methods (including statistical analyses when appropriate).
 - D. Plans for future research funding related to this project.
 - E. References (Note: Not included in page limitation)
 - F. Appendix items (if appropriate)
4. Budget (see Sample Budget). Items must be budgeted under the categories listed on the attached "Sample Budget". The budget must be adequately detailed and justified. Graduate student stipends should be budgeted at a rate of \$1,370 (minimum) per month for 2008-09, and only resident tuition should be requested (estimate at \$2,810/semester). **NOTE: If you are awarded funds from the Animal Health Disease pool, by rule they cannot be used to pay for student tuition.**
5. Be prepared to complete "Human Subjects", "Biosafety", "Animal Care" or "VTH facility" form where appropriate, if your proposal is funded. **You will be**

notified by the Associate Dean for Research if your proposal has been funded. You will then be required to submit forms to the appropriate Regulatory Committees and VTH (if appropriate) and one copy of each to the Dean's Office. Grants will not be funded until the necessary reviews and approvals have been obtained.

VI. EVALUATION OF PROPOSALS

The College Research Council will evaluate proposals and will make recommendations regarding funding to the Associate Dean for Research and Graduate Education. The Dean's Office, concerning funding decisions, will inform principal investigators before the end of spring semester. A critique of the proposal can be obtained from the Associate Dean for Research and Graduate Education.

The Council will confine its considerations during the review to the material in the grant proposal. To allow the reviewers a high degree of objectivity, faculty should adhere to the guidelines for preparation of proposals. Failure to do so will be grounds for rejection without scientific review. Proposals must contain a testable hypotheses and sufficient details regarding experimental design and statistical analysis. **Please remember that all reviewers may not be experts in your area of research. Thus, proposals should be written with adequate background information and a minimum of technical jargon. Proposed funding must be justified regardless of past research productivity or funding. As with all grant proposals, critique rebuttals are inappropriate since the case for funding should be contained within the original proposal.**

EVALUATION CRITERIA

The following criteria and weighing factors will be used in evaluation.

Points	Part of Proposal
20	A. Hypothesis/Specific Aims (10 points) Introductory paragraph. Clear description of hypothesis to be tested -including brief summary of background material that led the investigator to form the hypothesis (10 points) Clear description of one or two specific aims that will address the hypothesis to be tested. Each specific aim should be accompanied by a list of the experiments that will be performed to address this specific aim. These may be written in the form of questions that the experiments will attempt to answer.
35	B. Background and Significance

(20 points) This section should expand on the introductory paragraph and include a concise review of the literature that supports the hypothesis to be tested. Preliminary data should be included here if available.

(15 points) It is the responsibility of the investigator to convince the reviewer of the significance of the problem to be tested

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C. Research Design and Methods

(20 points) Experimental approach. Provide concise detail of the methods to be used. Clearly state the rationale for doing each experiment. What question(s) will be answered by the results obtained?

(20 points) Expected results-data analysis. Provide a critical evaluation of the potential results. What are the potential problems that may be encountered with each experiment?

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D. Feasibility/Expectation for Future Funding

(5 points) Provide detailed information regarding plans for future funding.

SAMPLE BUDGET

1. SALARY EXPENSE

Salaries for GRAs, state-classified personnel, and all types of hourly expense should be itemized.

2. EQUIPMENT EXPENSE

If equipment exceeding \$500/unit cost is requested, extensive justification must be provided.

3. OPERATING EXPENSES

All consumables: VTH pharmacy, VTH storeroom, chemistry stockroom, bookstore supplies, lab supplies, animal purchase, feed, etc.

4. TRAVEL EXPENSE

Include only travel necessary to conduct the proposed research. Travel to meetings is not allowed.

5. OTHER DIRECT EXPENSE

Services: lab animal care, analytical tests, laboratory analyses, **tuition**, equipment maintenance and any other type of intangible goods except salary expenses.

The following are **not allowable expenses**: Salaries for faculty, salaries for non-CSU personnel, multiple support staff, off-campus services (if unavailable on campus, prior approval should be obtained by the Associate Dean for Research and Graduate Education), travel to scientific meetings, cost of publications, etc. Any questions concerning these policies should be directed to the Associate Dean for Research and Graduate Education.

APPENDIX

Here are some general tips for writing your application (modified from NIH Website- “How to write a research grant”):

- Your application should be based on a strong central hypothesis.
- Be sure your project has a coherent direction.
- Don't be overly ambitious - your plan should be based on a feasible timetable.
- Specific aims and experiments should relate directly to the hypothesis to be tested.

A. Hypothesis/Specific Aims

- The specific aims should be driven by the hypothesis you set out to test. Make sure they are highly focused.
- Begin this section by stating the general purpose or major objectives of your research. Be sure all objectives relate directly to the hypothesis you are setting out to test. If you have more than one hypothesis, state specific aims for each one. Keep in mind your research methods will relate directly to the aims you have described.
- Choose objectives that can be easily assessed by the review committee. Do not confuse specific aims with long-term goals.

B. Background and Significance

- It is the investigator's responsibility to convince the reviewer of the significance of the proposal. State how your research is innovative, how your proposal looks at a topic from a fresh point of view or develops or improves technology.
- Show how the hypothesis and research will increase knowledge in the field.
- Justify your proposal with background information about the research field that led to the research you are proposing. The literature section is very important because it shows reviewers you understand the field and have a balanced and adequate knowledge of it.
- Use this opportunity to reveal that you are aware of gaps or discrepancies in the field. What gaps will your research proposal fill?
- Preliminary data, if included, should support the hypothesis to be tested and the feasibility of the project.
- Preliminary data may consist of your own publications, publications of others, unpublished data from your own laboratory or from others, or some combination of these.

- Include manuscripts submitted for publication. Make sure it's clear which data are yours and which others reported.

C. Research Design and Methods

- Organize this section so each experiment or set of experiments corresponds to one of your specific aims. What questions are being asked?
- Convince reviewers that the methods you chose are appropriate to your specific aims, that you are familiar with them. If your methods are innovative, show how you have changed existing, proven methods while avoiding technical problems.
- The Research Plan must be self-contained. If an appendix is included, it should not be used to circumvent the Research Plan page limits.

1) Approach

- State why you chose your approach(es) as opposed to others.
- If you are choosing a nonstandard approach, explain why it is more advantageous than a conventional one. Ask yourself whether the innovative procedures are feasible and within your competence.
- Call attention to potential difficulties you may encounter with each approach. Reviewers will be aware of possible problems; convince them you can handle such circumstances. Propose alternatives that would circumvent potential limitations.
- Spell it out in concise detail. While you may assume reviewers are experts in the field and familiar with current methodology, they will not make the same assumption about you. Provide just enough detail to show you understand and can handle the research.
- Make sure any proposed model systems are appropriate to address the research questions and are highly relevant to the medical problem being modeled.

2) Expected Results

- Show you are aware of the limits to - and value of - the kinds of results you can expect based on current knowledge of the subject. State the conditions under which the data would support or contradict the hypothesis and the limits you will observe in interpreting the results.
- Show reviewers you will be able to interpret your results by revealing your understanding of the complexities of the subject.
- If appropriate, describe your proposed statistical methods for analyzing the data you plan to collect. Define the criteria for evaluating the success or failure of a specific test.

Other pointers

- Describe sources of reagents, animals or equipment not generally available. If collaborators will provide them, include letters from the sources in your application.
- Include supporting data. Where appropriate, include well-designed tables and figures. Use titles that are accurate and informative. Label the axes and include legends. Reviewers will look for discrepancies between your data and text.
- Include relevant publications. If you (or your collaborators) have publications showing your use of the proposed methods, put them in the appendix.