



ROAR II Project

Request for Proposals: Studies to detect and quantify the transfer of antibiotic resistance elements from non-infecting bacteria to pathogens.

APUA and the ROAR Project

The Alliance for the Prudent Use of Antibiotics (APUA) is an independent non-profit organization dedicated to curbing antibiotic resistance through education and research activities (see www.apua.org).

Under the leadership of Dr. Stuart Levy, the President of APUA, and Dr. Abigail Salyers of the University of Illinois, the first phase of the Reservoirs¹ of Antibiotic Resistance (ROAR) Project was initiated in 1997 to encourage global research and assemble information on the genotypes and phenotypes of commensal bacteria that serve as reservoirs of antibiotic resistance determinants for human pathogens. The central hypothesis of the ROAR Project is that resistance genes are flowing from commensals to pathogenic strains; and that characterizing and tracking resistance genes in commensal bacteria could help to predict the emergence of new forms of resistance genes before they gain ascendancy in pathogenic bacteria. The ROAR Project is the first systematic effort to compile and disseminate information on resistance in reservoir bacteria.

Monitoring resistance patterns in commensal and soil bacteria could also provide valuable clues about non-antibiotic selection pressures. For example, screening for integron- and plasmid-mediated clusters of antimicrobial resistance genes may reveal gene combinations that are co-selected by non-antibiotic pressures. Additionally, monitoring resistance gene distribution and diversity in commensal bacteria will provide information essential for public officials charged with assessing risks associated with antibiotic use in human medicine, food production and agricultural practices. The current information gap precludes a full understanding of the problem of antibiotic resistance, and therefore impedes its solution.

To better understand the role of commensals as reservoirs of antibiotic resistance, APUA has launched ROAR II to investigate the contribution of commensal, i.e. non-infecting, bacteria to the emergence of antibiotic-resistant pathogens.

Effective August 15, 2002, the five-year grant from the National Institute of Allergy and Infectious Diseases is intended to anticipate and forestall infections not treatable by antibiotics and possibly reverse current antibiotic resistance trends.

Goal/Objectives

ROAR is requesting proposals for research addressing the flow of antibiotic resistance genes from commensal to disease-associated populations. The funded research studies will be pilot projects, aimed simultaneously at providing a basis for further fundable study, and providing data appropriate to build an APUA-curated database of the genes and the isolates from which they are described. Funded studies will address the concepts that commensal bacteria serve as reservoirs for the emergence and continued proliferation of antibiotic resistance genes in disease-associated bacteria, and that commensal bacteria can donate antibiotic resistance elements to disease-associated bacteria. The data produced from these studies will provide for the development of more substantive research projects, in addition to providing a basis for

¹ The ROAR Project defines an antibiotic resistance reservoir as a population of bacteria that have acquired resistance genes that have the capability of being transferred to other bacteria, especially human pathogens.

ROAR’s quantitative assessment of the relationship between resistance in commensals and emerging resistance in human pathogens.

To maximize the value of the data produced, the ROAR Project hopes incorporate multi-locus sequence typing (MLST) data. Future ROAR plans include expansion into this area, and projects utilizing this methodology are encouraged.

CRITERIA FOR RESEARCH PROJECT APPROVAL

APUA will fund research projects pertinent to the goal and objectives above. Under the direction of APUA’s Research Director, proposals will be evaluated by a Peer Review Committee comprised of members of the ROAR II Steering Committee and APUA’s Scientific Advisory Board. Proposals will be judged according to the criteria below. Proposal funding priority will be based on the score given using the 100-point scale described.

1. Significance: Goal and rationale of the project; topic significance; local and regional priority; potential clinical impact.	25
2. Approach: Study design, including methods, projected results, potential problems:	30
3. Investigator: Personnel qualifications and organizational capacity, including partnerships:	20
4. Environment: Generalizability of findings to other biological systems:	10
5. Management plan, including timetable and plans for monitoring and evaluation:	10
6. Budget rationale:	5
Total	100

Reviewers will provide an evaluation of the proposal along with a numerical score. Rigorously designed project designs will be given funding priority. Identification of the specific populations and variables under study will be required, as well as specific definitions of the outcomes. In order to facilitate the development of such proposals, APUA staff will be made available for consultation during all stages of the proposal development.

AMOUNT/AWARDS

- Awards for proposals are up to \$60,000 for a maximum of one year. Provision is not offered for funding of indirect costs.
- There is no overhead with these awards.
- Funds may only be used for the salary and fringe benefits of faculty or study personnel and for research-related tests and supplies. No funds may be expended for equipment or travel.
- Awards will be made once per year and will be limited to one year’s duration. Awards may be renewed for a second year only under special circumstances and with approval by APUA.

PROPOSAL GUIDELINES

Research proposals should carefully define the bacterial populations being sampled, with respect to the environment(s) in which they are isolated. Proposals should provide a rationale for studying specific bacterial populations, compartmentally isolated with respect to their pathogenicity and source. Research proposals should carefully define the environment studied, the genes or resistances studied, and the clinical relevance of the study.

The application should be no more than four pages, exclusive of no more than 20 references and a one-page budget justification. It should contain the following information:

1. The specific project goals and objectives. Describe specific bacterial populations of interest and associated human health implications.

2. A specific description of the methodology used for data collection, detailed data management and analysis plan, and a management plan for monitoring and evaluating the project, including a timetable for achievement of results for each step.
3. The expected sample size, and any appropriate power calculations pertinent to the hypothesis being tested.
4. The staff and their qualifications for proposed responsibilities within the research plan. Include the resume or curriculum vitae of the Project Director. Resources (human, facilities, financial, and in-kind contributions) required to achieve results. Present the total estimated financial resources adequate to achieve the desired results. Present an itemized budget in both local currency and USD.
5. Any anticipated resources from other sources that will be used to contribute to the success of the proposed research plan including collaborative efforts that will enhance the proposed project's effectiveness and impact

PROGRESS REPORTING

- Investigators are asked to notify the ROAR Principal Investigator in writing of significant changes in the focus of the research or allocation of funds during the project.
- APUA requests that funded investigators report progress 6-months into project implementation.
- Within 60 days of completing the project, the investigator should submit a final progress report stating preliminary scientific findings, any publications that result from the research, and an accounting of unexpended funds.
- Final progress reports will also be used to evaluate extension of funding into a second year if requested by the investigators. Recipients will also be asked to report applications or publications that result from this project on an annual basis for two years after the completion of the project.

APPLICATION PROCEDURE

Please submit a proposal no more than four pages in length, exclusive of references and a one-page budget justification. Font type is to be no less than 10 points, with 1-inch page margins.

Any questions regarding this RFP should be directed to the ROAR Principal Investigator:
Allison Hodges Myerson, M.S., M.A.
Research Coordinator
allison.hodges@tufts.edu

APUA staff will be available to consult on project development, and we encourage those applying to contact the individuals above for any assistance required.

Finished proposals should be sent electronically to either of the above listed contacts and are due no later than **October 15, 2003**. Additionally, proposals may be faxed to the above individual: (617) 636-3999.