California State University

Agricultural Research Initiative (ARI)

California Polytechnic State University, San Luis Obispo
Campus Funding Only

FY 2003-2004
Call for Proposals
Guidelines

by

Dr. Dave Wehner, Dean
Dr. Mark Shelton, Campus Coordinator
Ms. Sue Tonik, CAGR Grants Analyst

May 24, 2002
# TABLE OF CONTENTS

1. General Information  
   - Campus Proposals 4  
   - Indirect Charges 5  
   - Notice of Intent 5  
2. Format/General Instructions 5  
3. Checklist Instructions 5-7  
   - Title 6  
   - Submission Date 6  
   - Principal Investigator/Project Director 6  
   - Co-principal Investigator 6  
   - Faculty Release, Summer Salary, and Overload Pay 6  
   - Proposal Type 6  
   - Funding Request 6  
   - External Match 6  
   - Research Focus Areas 7  
   - Funding Requirement 7  
4. Signature Page Instructions 7  
   - Campus Coordinator 7  
   - Department Chairs/Heads 7  
   - Center Directors, Farm Managers, and Directors of Operation 7  
5. Timelines 7-9
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Submissions, Review, Award Notification, and Funding</td>
<td>7</td>
</tr>
<tr>
<td>Orientation</td>
<td>8</td>
</tr>
<tr>
<td>Interim, Annual and Final Reports</td>
<td>8</td>
</tr>
<tr>
<td>6. Abstract/Impact/Summary Page Instructions</td>
<td>9</td>
</tr>
<tr>
<td>7. Narrative Instructions</td>
<td>9-11</td>
</tr>
<tr>
<td>Statement of Problem/Issue</td>
<td>9</td>
</tr>
<tr>
<td>Statement of Methodology</td>
<td>9</td>
</tr>
<tr>
<td>Dissemination Plan</td>
<td>9</td>
</tr>
<tr>
<td>Impact/Industry Support Statement</td>
<td>10</td>
</tr>
<tr>
<td>Staffing</td>
<td>11</td>
</tr>
<tr>
<td>Budget</td>
<td>11</td>
</tr>
<tr>
<td>Outcome Evaluation Plan</td>
<td>11</td>
</tr>
<tr>
<td>Attachments</td>
<td>12-19</td>
</tr>
<tr>
<td>1. Contact List</td>
<td>12</td>
</tr>
<tr>
<td>2. Project Timeline</td>
<td>13</td>
</tr>
<tr>
<td>3. Proposal Evaluation Instructions</td>
<td>14-15</td>
</tr>
<tr>
<td>4. Proposal Rating Sheet</td>
<td>16</td>
</tr>
<tr>
<td>5. Project Reporting Forms</td>
<td>17</td>
</tr>
<tr>
<td>6. In-Kind Match Verification Form</td>
<td>18</td>
</tr>
<tr>
<td>7. Services, Equipment, Materials, and/or Other Contributions Verification Form</td>
<td>19</td>
</tr>
</tbody>
</table>
PROPOSAL FORMAT

1. General Information
The ARI provides public funds that are annually matched at least one-to-one with industry/agency resources to fund high impact applied agricultural and natural resources research, development, and technology transfer, as well as related public and industry education and outreach. Its projects and programs improve the economic efficiency, productivity, profitability, and sustainability of California agriculture and its allied industries. ARI programs lead to consumer sensitive and environmentally sound food and agriculture systems and foster public confidence in food safety and agricultural research and production systems. Through a system of university-industry partnerships, the ARI focuses on finding immediate and practical solutions for high-priority challenges in the following research areas:

- Agricultural business
- Biodiversity
- Biotechnology
- Food safety, nutrition, processing, & new product development
- Natural resources
- Production & cultural practices
- Public policy
- Water & irrigation technology

Proposals may be submitted for system or campus funding as single or multiple-year projects not to exceed three years. Priority is given to proposals that address significant regional and/or statewide issues, have the ability to benefit California agriculture and natural resources, and can demonstrate scientific merit and external match funding. Reviewers will evaluate proposals for quality using the published ARI Proposal Rating Sheet (PRS). PRS scores will be used to prepare a ranked list of proposals. After this ranking is prepared, the order of proposals recommended for funding may change due to addition or subtraction of points for: collaboration among universities and/or university, industry and other agricultural research agencies, documentation of external match, and compliance status of the principal investigators on previously funded ARI research. The type of match further stratifies projects of equal ranking. Priority will be given to those proposals that document 100% hard cash match. Proposals with a combination of matching support are prioritized in order of highest percentage of cash match relative to the ARI funding request. Proposals indicating cash or in-kind match must include verification from the funding source. If verification is not included at the time of submission, the match will be considered pending.

A. Campus Proposals
Campus funding is available to all CAGR tenure-track faculty on a competitive basis. Campus funding may be utilized to fund a variety of proposals that address local, regional, or statewide issues, including seed funding proposals. External match of not less than an amount equal to the ARI funds requested is expected and applicants are highly encouraged to aggressively pursue “project related” external funding. In-kind match may be utilized; however, it shall not exceed 75% of the total match requirement.
Seed funding proposals are typically single-year proposals of $5,000 to $10,000. Seed funding may be used to fund new faculty research proposals as well as time to develop new research proposals.

B. Indirect Charges
Pursuant to ARI policy approved by the Board of Governors regarding indirect charges, the ARI does not allow the imposition of any indirect charges to funding projects, contracts, subcontracts, and/or the transfer of portions of a project budget between colleges, centers, campuses, university systems, or other public or private agencies.

C. Notice of Intent
A Notice of Intent should be filed for each possible proposal. The format for this document is available on the web – see below. This includes a project name, summary and significance of proposed work, name of project director and any collaborators or cooperators, duration of project in years, estimate of funds requested for each year, and proposed source(s) of matching funds. **No full proposal will be accepted without a Notice of Intent file by the deadline.**

2. Format/General Instructions – Full Proposals only
Some forms are available via the web site at: [http://agriculture.calpoly.edu/cagr/ari/rfp.htm](http://agriculture.calpoly.edu/cagr/ari/rfp.htm)

Please use the following format – all items except attachments MUST be submitted electronically:

- **Program:** IBM – Microsoft Word and Excel
- **Font:** Times New Roman
- **Font Size:** 12 point
- **Margins:** 1 inch margins – top, bottom, left and right
- **Text:** single spaced
- **Headings:** double spaced and bolded
- **Checklist:** use the attached checklist pages (duplicate if necessary)
- **Signatures:** use the attached signature page (duplicate if necessary)
- **Budget:** use the attached budget page (duplicate if necessary)
- **Timeline:** use the attached timeline format
- **Footer:** essential on each page (document name, date and page number)

*Incomplete proposals will not be peer reviewed or considered for funding.*

3. Checklist Instructions
Attach the checklist pages to the front of the proposal (before the title page). Use the checklist pages provided on the web site – duplicate items or sections as necessary. If part or all of a checklist page section is not applicable, place an “NA” on the appropriate lines. The following information is required:
A. **Title** – Provide a complete proposal title. Pre-proposal and complete proposal titles must be the same.

B. **Submission date** – Provide the date the proposal was submitted to the Campus Coordinator.

C. **Principal Investigator/Project Director** – Identify the PI that serves as the project director/contact person most responsible for project coordination and outcomes. Provide the following information:
   - name
   - affiliation (center, department, college, university, company, etc.)
   - mailing address
   - phone number
   - fax number
   - e-mail address

D. **Co-principal investigators, collaborators and cooperators** – Provide the following completed information for all co-PI’s, collaborators and cooperators:
   - name
   - affiliation (center, department, college, university, company, etc.)
   - mailing address
   - phone number
   - fax number
   - e-mail address

E. **Faculty release, summer salary, and/or overload pay** – Identify all faculty release, summer salary, and/or overload pay requested by individual faculty member (indicate percentage of release time requested, if any, including the number of WTU’s, and quarter or semester involved).

F. **Proposal type and duration** – Identify whether the proposal is submitted for funding consideration as a campus or system proposal and state the duration of the project (note: three years funding is the maximum allowed).

G. **Funding request** – Identify the total ARI funding being requested. If the proposal is for a multiple-year project, also identify each fiscal year’s request separately.

H. **External match** – Documentation of all matches is REQUIRED. A letter or memorandum from the funding source MUST accompany the ARI proposal. The proposal REQUIRES the following information about external matches:
   - the names of all funding sources
   - category (industry or agency)
   - dollar amount of match (in-kind matches must be fair market value)
Pending funds must include the date of submission to an external funding entity and anticipated date of award notification.

I. ARI Research focus areas - Identify the research categories that best describe this proposal’s subject matter for scientific review. If more than one category is suitable, numerically prioritize your preference.

J. Funding requirement - Indicate in a short statement if your project must be totally completed as presented in this proposal, or if the research activities could be segmented and partially funded. Identify what impact partial funding would have on the project.

4. Signature Page Instructions
The principal investigator must secure all appropriate signatures prior to submission of a proposal to the campus coordinator. If one or more of the following signatories is not applicable to a proposal, place an “NA” in the appropriate space. Do not delete any signatory subsections. It is the PI’s responsibility to allow adequate time for each of the appropriate signatories to review and comment on the proposal prior to ARI submission deadlines. Signatories who have not been provided adequate review time may reject a proposal.

A. Campus coordinator
Campus coordinators will review proposals for conformity with ARI goals, objectives, and format, including collaboration and matching fund requirements. They will also verify the principal investigator’s compliance with existing ARI-funded projects.

B. Department chair/head
Department chairs/heads review proposals to ensure that the proposal supports the programmatic goals and objectives of the department, and that any release time, summer salary and/or overload request is practical and can be coordinated with the teaching requirements of the department.

C. Center directors and/or the farm manager/director of operations
Center directors and/or the farm manager/director of operations review proposals, if necessary, to ensure that the use of center/farm resources such as land, equipment, personnel, and laboratory and office space is reasonable, and that the support requested can be provided. The principal investigator must include financial resources to reimburse Farm or Centers for facilities and services and must also provide for returning resources in as good or better condition as before the project.

5. Timelines

A. Submissions, Review and Award Notification

mid May, 2002 RFP Released
October 25, 2002 Notices of Intent Due
4th Friday of October.

February 28, 2003 Proposal submission deadline to campus coordinators
4th Friday of February.

March 21, 2003 Proposal submission to reviewers
3rd Friday of March.

early May, 2003 Technical Review Committee meets

May 16, 2003 Award Notification
3rd Friday of May.

July 1, 2003 Funding availability or 10 working days after the Governor
signs the State Budget – All funding is contingent upon
approval of the State Budget.

Note: It is the Dean’s responsibility after consultation with the
college Campus Coordinator to certify each proposal meets
all the requirements identified in this Call for Proposals
including verification of match funding sources and value.
Researchers should submit all proposals and reports
directly to their campus coordinator/grants analyst.

B. Principal Investigator Orientation
Spring Through Fall Campus coordinators will provide ARI project orientation
materials for principal investigators within five weeks of
award notification.

C. Interim, Annual and Final Reports

November 7, 2003 Interim reports due
1st Friday of November.

December 26, 2003 Deadline for receipt of first year matching funds for new
awards.
4th Friday of December.

May 1, 2004 Annual Reports due for projects continuing beyond 12
months.

June 30, 2004 Project completion target date. End of fiscal year.
August 31, 2004  Final Reports due
Last working day of August.

Note: All campus project reports are due at the executive
director’s office within 60 days after the date due to
campus coordinators. It is the campus coordinator’s
responsibility to collect campus project reports. It is the
Dean’s responsibility, after consultation with the campus
coordinator, to certify that project reports are timely and
that they meet all ARI requirements. Researchers should
submit all campus reports directly to their campus
coordinator/grants analyst.

6. Abstract/Impact/Summary Page
Provide a brief summary (350 words or fewer, written for a generalist to understand) that
describes the research and its benefit to society and/or the industry that can also be used for
promotion. The abstract/impact/summary page is separate from the narrative.

7. Narrative
Project narratives are limited to no more than 8 single-spaced pages (excluding the checklist,
signature, summary, budget, timeline, and other attachment pages) and should include the
following:

A. Brief Statement of the Problem/Issue
Describe the problem or issue being addressed and explain why it is a high-priority for
California agriculture; what is the anticipated economic impact of addressing the issue as
the proposal suggests; and what are the short-term, intermediate and/or long-term benefits
of conducting this research. Describe how this project is unique or supports the research
of others.

B. Statement of Methodology
Provide a statement of the purpose of the research, a list of the research objectives, and a
description of the research activities. Include the experimental design, the method of data
collection and data analysis. A timeline of major activities (see Attachment 4) should
outline the start and ending date of each activity.

C. Dissemination Plan
Each plan must contain a detailed account of the actions that will be taken to disseminate
project results to the California agricultural industry. A copy of all dissemination
manuscripts must be submitted to the executive director’s office within thirty days of its
first presentation for ARI publication and promotion. Examples of dissemination
activities acceptable for ARI projects are the following:
Events
- Conferences, seminars, workshops, or field days
- Continuing education professional programs

Publications
- California State University Agricultural Research Initiative (CSU/ARI) annual report
- California State University Agricultural Research Initiative (CSU/ARI) web site
- California Agricultural Technology Institute (CATI) Update articles
- Newsletter articles
- Technical reports, research bulletins, circulars, or fact sheets
- Interim reports of research in progress
- Articles in popular trade journals and other publications
- Articles in refereed journals
- Books
- Monographs

Presentations
- Posters
- Video/photographic materials
- Industry meetings
- ATI-Net (Internet)

It is expected that major effort will be made to provide relevant information to California farmers, ranchers, agribusiness concerns and other relevant stakeholder groups. While professional journal publications, attendance and presentations at professional meetings, and other service to one’s discipline are strongly encouraged, involvement in these activities alone does not constitute a complete ARI dissemination plan, because California farmers’, ranchers’, and agribusiness concerns typically do not receive such publications or participate in such activities.

In general, dissemination costs should be borne by both ARI and the external supporters.

Include time in the project timeline for completion of the dissemination activities. The project cannot be considered finished until the dissemination of results is complete.

D. Impact/Industry Support Statement
Describe the value of the proposed research to California agriculture and its related industries. This can include a brief cost-benefit analysis. Identify the commitment of industry to this research by providing information about current involvement of industry in the research, by explaining how the research is prioritized by the industry; and by identifying the amount of money industry will provide in support of your research. Outline the steps taken to create collaborations and to secure external funding for the proposed research. Strong preference will be given to projects with demonstrated external industry and/or agency support. If external support is not an integral part of this
project, explain why this high-priority research has failed to attract industry support and what steps will be taken to develop such support throughout the duration of the research.

E. Staffing
Identify the principal investigator/project director and all co-principal investigator(s) as well as all collaborator(s) and cooperator(s), including their institutional affiliation, mailing address, phone and fax numbers, and e-mail address. All key personnel who are expected to be involved in the research should be clearly identified. For each key person the following should be included:
1. A statement of roles and responsibilities;
2. A statement of each person’s time commitment; and
3. A curriculum vitae or resume for each key person must be provided in attachment form.

Faculty may claim release time and/or added compensation on ARI projects within the CFA guidelines. Release time, rather than added compensation, is strongly encouraged for academic year duties.

Identify the anticipated sources of required professional, technical, and clerical staffing. ARI strongly encourages collaborative working relationships among departments, other colleges, other CSU campuses, the University of California, industry partners, and other agricultural research agencies. The participation of graduate and undergraduate students in project activities is also strongly encouraged.

F. Budget
Provide a complete budget narrative justification for each budget line item. Use the Excel spreadsheet format provided on the web site to communicate your funding needs and the use of your matching funds. Please use one sheet per source per year. Budgets will be evaluated based on the relationship between resources requested and work proposed (i.e., level of funding requested relative to work performed, appropriateness for proposed work, and efficient use of funds).

G. Outcomes Evaluation Plan
Describe how you will evaluate the success of your research project. Include a list of your research objectives and/or activities and under each identify the outcomes that will indicate your accomplishments.
Attachment 1

ARI Contact List

CSU ARI Executive Director
Joe A. Bezerra
(559) 278-2361 (559) 278-4849 Fax
joe_bezerra@csufresno.edu
California Agricultural Technology Institute
California State University, Fresno
2910 E. Barstow Avenue M/S OF115
Fresno, CA 93740-8009

Cal Poly, SLO Campus Coordinator
Mark D. Shelton
(805) 756-2161 (805) 756-6577 Fax
mshelton@calpoly.edu
California Polytechnic State University, San Luis Obispo
1 Grand Avenue
San Luis Obispo, CA 93407

Cal Poly, SLO CAGR Grants Analyst
Sue Tonik, M.S.
(805) 756-7241 (805) 756-6577 Fax
stonik@calpoly.edu
California Polytechnic State University, San Luis Obispo
1 Grand Avenue
San Luis Obispo, CA 93407
**Attachment 2**

**Project Timeline Format**

<table>
<thead>
<tr>
<th>Major Activity Areas/Objectives</th>
<th>Performance Period</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>J A S O N D J F M A M J</td>
</tr>
</tbody>
</table>

**Activity Area I**

Objective 1

- Activity 1: \( \text{s} \rightarrow \text{c} \)
- Activity 2: \( \text{s} \rightarrow \text{c} \)
- Activity 3: \( \text{s} \rightarrow \text{c} \)

Objective 2

- Activity 1: \( \text{s} \rightarrow \text{c} \)
- Activity 2: \( \text{s} \rightarrow \text{c} \)

**Activity Area II**

Objective 1

- Activity 1: \( \text{s} \rightarrow \text{c} \)
- Activity 2: \( \text{s} \rightarrow \text{c} \) \( \text{s} \rightarrow \text{c} \)

Objective 2

- Activity 1: \( \text{s} \rightarrow \text{c} \)

\( \text{S} = \text{start date} \)

\( \text{C} = \text{completion date} \)
Attachment 3

Instructions for Review Committee Proposal Evaluation

Instructions: Using the criteria listed below, please evaluate the attached proposal for ARI funding and record the scores on the attached Proposal Rating Sheet (PRS). Each set of criteria requires a brief written explanation and a numerical rating. Please provide any additional comments and/or suggestions that you believe may enhance the project goals and/or outcomes.

A. Approach to the Problem/Issue (20 points):
Determine whether the problem is addressed clearly and presented convincingly. The proposer should demonstrate a clear understanding of the significance of the problem, which should be solvable. Determine whether other researchers are addressing this problem, and whether the project director possesses a thorough understanding of related work that has been reported by other researchers.

B. Statement of Methodology (20 points):
Determine whether the proposed methodology is sound and whether there are any significant limitations associated with the design of the project. Determine whether the proposal indicates data will be collected and analyzed, whether the major objectives and milestones of the project have been identified, and whether they are appropriate. Evaluate whether the timeline of proposed activities is realistic and appropriate to the work proposed, and whether the objectives can be achieved using the approach identified.

C. Dissemination Plan (10 points):
Determine whether the information dissemination activities proposed are adequate, that they primarily address California farmers’, ranchers’, and/or agribusiness concerns (a requirement for all ARI funded projects), and that they are well thought out.

D. Evidence of Economic Impact to the California Industry and Consumer (15 points):
Evaluate the value of the work proposed relative to California agriculture, agribusiness, food and natural resources and whether the agricultural industry recognizes this problem and assigns it a high priority. Determine whether the problem is of sufficient interest to have already garnered financial support, whether the proposer has taken steps to develop industry financial support for the project, and whether the project shows evidence of other cooperation with and interest from industry. If no support from industry is presently available, determine whether the proposal describes specific steps to be taken to develop industry support.

E. Staff Needs/Researcher Qualifications (15 points):
Determine whether the proposal clearly describes the qualifications of the principal personnel to solve the identified project problem (training, education, demonstrated awareness of the issue) and whether the level of staffing is appropriate.
F. **Budget Appropriateness (10 points):**
Evaluate whether the resources requested are appropriate to the work proposed and whether there are more efficient ways to conduct the project to reduce the resources required. Determine whether there is a clear relationship between the resources requested and the work proposed. Determine whether the proposal indicates evidence of financial support for the project from sources other than ARI.

G. **Project Outcomes Evaluation Plan (10 Points):**
Evaluate whether the methods to be used for assessing the finished project will achieve the objectives stated in the original Project Plan.
## FY 2003-2004 ARI Proposal Evaluation Rating Sheet

Proposal Number:  
Principal Investigator:  
Proposal Title:  
Project Duration:  
Total ARI Request:  
System/Campus Proposal: campus  
Research Focus Area:  
Campus: Cal Poly, SLO  
Reviewer:  

<table>
<thead>
<tr>
<th>Scientific Evaluation Criteria</th>
<th>Maximum Points</th>
<th>Points Awarded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approach to the Problem</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Project Methodology</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Dissemination Plan</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Evidence of Economic Value</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Researcher Qualifications</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Budget Appropriateness</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Outcome Evaluation Plan</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100</strong></td>
<td></td>
</tr>
</tbody>
</table>

### ARI Priority Criteria (To be completed by Campus Coordinator)

<table>
<thead>
<tr>
<th>+/- Points</th>
</tr>
</thead>
</table>

### Reviewer’s Comments

Other documents available as needed:
General Information
ARI funds both single-year projects and multiple-year research projects up to three years. Therefore, the ARI requires the following research information reports:

- Interim Reports
- Annual Reports
- Final Reports

The formats for all reports can be found on the web site at:
http://agriculture.calpoly.edu/cagr/ari/report.htm
The following forms are examples for verification of in-kind match before and after receipt. Other formats are acceptable, these are provided only as samples.

**Attachment 6**

**CSU Agricultural Research Initiative**  
**In-Kind Match Commitment Agreement**

| Date: ____________________________________________ |
| Contributor’s name: ____________________________________________ |
| Contributor’s address: ____________________________________________ |
| Contact person: ___________________________ Phone number: ___________________________ |
| Fax number: ___________________________ E-mail address: ____________________________________________ |

The following services, equipment or products are being provided in support of the CSU Agricultural Research Initiative project titled:

(ARI Project Title)

(ARI Project Director)  (ARI Project #)

Please provide a detailed description and dollar value of services, equipment or products being contributed in support of the project indicated above.

| Services Description and $ Value: ____________________________________________ |
| Equipment Description and $ Value: ____________________________________________ |
| Supplies or Product Description and $ Value: ____________________________________________ |

(Please attach a separate sheet if additional space is needed.)

Include the estimated date of delivery of product or equipment or time in which services will be provided. Please refer to the attached guidelines for requirements concerning documentation of contributions such as those listed below:

| Estimated date of delivery for each of the items listed above: ____________________________ |
| Name and signature of authorized individual providing the In-kind Contribution: |

| ________________________________________________________________________ | ________________________________________________________________________ |
| Print Name of Donor’s Authorized Signatory | Signature of Donor’s Authorized Signatory |
Attachment 7
Research Initiative
Services, Equipment, Materials and/or Other Contributions Verification Form

Contribution for the ARI Project titled: ________________________________________________

ARI Principal Investigator: _________________________ ARI Project # ______________________

Services:__________________________________________________________________________

Name of individual performing work:____________________________________________________

Type of work performed:______________________________________________________________

Total number of hours worked:________________________________________________________

Dates of work performed:______________________________________________________________

Hourly rate of pay or market value:_____________________________________________________

Signature of individual performing work: ________________________________________________

Date: _____________________________________________________________________________

Equipment, materials, or other contributions provided:

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________

_________________________________________________________________________________