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How to prepare and fund scientific research project

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- Idea, proposal, writing, realisation- transfer of personal experience as a grant writer and a grant reviewer-

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What is project?

- Structured research with BUDGET, conducted by activities planned to reach specific aims which are defined based on hypothesis that is related to the general goals of the program that funds the project, conducted in determined time frame (my definition 😊).
- **Funded by SOMEBODY OR SOMETHING**
- Research projects vs. Educational vs. Community- based project

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Why to write a proposal?

- To fund the research part of your PhD student's thesis
 - For experiments, travelling to conferences, equipment, publication fees, honoraria (some projects), education abroad and networking
- To built your own laboratories
- Because you like science and want to test your ideas
- To make money
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- Because you are bored... 😊

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How to find funding?

- WEB- programs and grants
 - HRZZ <http://www.hrzz.hr/>
 - IPA crossborder or general <http://www.safu.hr/hr/o-programima-eu/ipa>
 - HORIZON 2020 <http://ec.europa.eu/programmes/horizon2020/>
 - NIH
 - Welcome trust....
 - Interreg
 - Science and innovation...
- Sponsors

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When looking for funding, ask yourself
- Is this the right source?

- Are you eligible?
- Does your goal meet the funder's mission?
- Does the grant size fit your project?
- Does the timing work?

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How to start writing a grant proposal?

- Read ***Guidelines for applicants***
- Read the application form and other required forms
- Note down deadlines
- Note all necessary documentation, signatures, stamps, LORs, etc

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- Form for IP project HRZZ <http://www.hrzz.hr/default.aspx?id=134>.

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Laying the Foundation

- ▶ What is your vision for your scholarly work?
 - What contribution to the field are you hoping to make?
 - Do you have some preliminary results to build upon?
 - Have you established any collaborations?
 - Are you well-informed about the prior results in the field?
 - What will the grant funding allow you to do?
 - Sabbatical support
 - Research equipment
 - Faculty or course development
 - Travel support

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How to start?

- How to choose the topic of the proposal:
 - Priorities of researcher, of the institution (e.g. strategy of science development), of funder of grants.
- Resources:
 - Facilities, team members, equipment, need for additional equipment, financial and organisational conditions
- Project principal investigator (team leader, coordinator):
 - Very important - personal and professional qualities of PI, capability to implement the project
- Timeframe and expenses
- Ethical principles adherence



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The structure of the research project (IP_ HRZZ)

- Title/topic of the project. Abstract. Key words
- Co-researchers (PI, researchers, technical stuff)
- Financial plan (budget).
 - Equipment – resources - lab space (facilities)
- Description of the proposal- the aim and application; current knowledge in the field- contribution and capabilities of reserachers
- Hypothesis,
- Plan,
- Methodology

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A Well Thought-Out Project:

- Will have
 - one or two goals
 - several objectives related to the goals
 - many methodological steps to achieve each objective.

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Objectives

- The objectives state the essence of the proposed work in terms of **what** will be accomplished.
- Break the goal down to specific measurable pieces, the outcomes of which can be measured to determine actual accomplishments.

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Objectives

- Objectives discuss **who** is going to do **what**, **when** they will do it, and **how** it will be measured.
- Discuss desired end results of the project.
- But not how those results will be accomplished.
- They are action oriented and often begin with a verb.
- Arrange them in priority order.
- In a research proposal the objectives are the hypotheses, they are less specific, but reinforce that the project is conceptually sound.

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Research Objectives

- Generation of new knowledge
- Hypothesis or research questions
- Generally short
- Example:
 - determine the impact of sheep ranching on the wolves in Lika
 - identify the needs of the farmers in preventing loss of sheep due to wolves predation
 - formulate ranching guidelines to meet the needs of the farmer and the wolves

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Methodology, Project Design, Plan of Action

- Often the most detailed and lengthy section
- What specific activities will allow you to meet your objectives
- Task oriented, specific, detailed
- Essential that you demonstrate all the steps necessary to complete project with each flowing logically from the previous to the next.



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Questions for Methodology

- Walk the reader through your project
- Describe the activities as they relate to the objectives
- Develop a time line and/or organizational chart
- How will the activities be conducted?
- When?
- How long?
- Who?
- Where?
- What facilities?

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Methodology in a Research Proposal

- If methodology is new or unique explain why it is better than that previously used
- Specify research design and why it was chosen.
- Include descriptions of variables and their relationships.
- Define all important terms
- Provide descriptions of data sources including subjects, how they will be selected, the size of subject pool, and the size of the sample.
- Describe all procedures
- Include pilot instruments and data when possible
- Step-by-step work plan

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Quality of Key Personnel



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Who Are these People, and Why Should we Give them our Money?

- This is where you demonstrate that you are the right person to do this project.
- Do not simply say “See resume.”
- Convince the reviewer you are capable of accomplishing what you say you can accomplish
- Highlight the expertise of all key personnel
- Include experience you have had managing other projects
- Weak qualifications or inexperience in some cases can be compensated for by adding appropriate consultants. Include why you need consultants and how you chose them.
- If you don’t identify a person, summarize the job description or qualifications required and how you will find that person
- Indicate responsibilities of all, and level of effort.

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In Key Personnel Section Address...

- Publications in the area of the proposal or related areas.
- Evidence of relevant training, certification, or clearance.
- Unpublished papers, conference presentations in the area.

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Planning Ahead

- Begin the proposal process at least 1 year out
- Work backwards from when you need the money
- Let the project be the driver for how much \$ you're seeking
- Meet internal funding deadlines

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Tricks of the Trade

- Obtain a Successful Proposal
- Ask confident colleagues who are experienced in grants to read and review your proposal
- Have preliminary data

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Proposal Development

- Know your audience
- Write an outline – use form headings and reviewing criteria
- Expect to prepare several drafts
- Use grant writing resources
- Answer reviewer questions

hope.edu/admin/osr/grant_writing.html

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Writing style

- Format according to guidelines
- Write for the general public
- Use third person
- No jargon
- Be concise
- First sentence as main point
- Spell check

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BUDGET

- Helps you plan the research project
- Use Excel spreadsheet
- Secure internal funds (if needed)

hope.edu/admin/osr/institutional_data.html

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Budget terms

- PI/PD and Co-PI/PD – principle/primary investigator /project director
- Participant – conference attendee / summer student training
- Fringe Benefits – taxes, retirement and insurance
- Indirect / F&A (facility) costs - overhead costs (i.e. Utilities) ; federal negotiated rate
- Cost share/ Matching funds – by institution
 - a. financial
 - b. in-kind
- Subrecipient/ subaward / subcontract

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Grant proposal evaluation

- <http://www.hrzz.hr/default.aspx?id=134>

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Reviewer Questions

- ▶ What's the intellectual merit?
 - How important is the project to advancing knowledge and understanding within its own field or across fields?
- ▶ What's the broader impact?
 - How well does the activity advance discovery and understanding while promoting teaching, training, and learning? How will it be disseminated? What may be the benefits of the proposed activity to society?

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Reviewer Questions

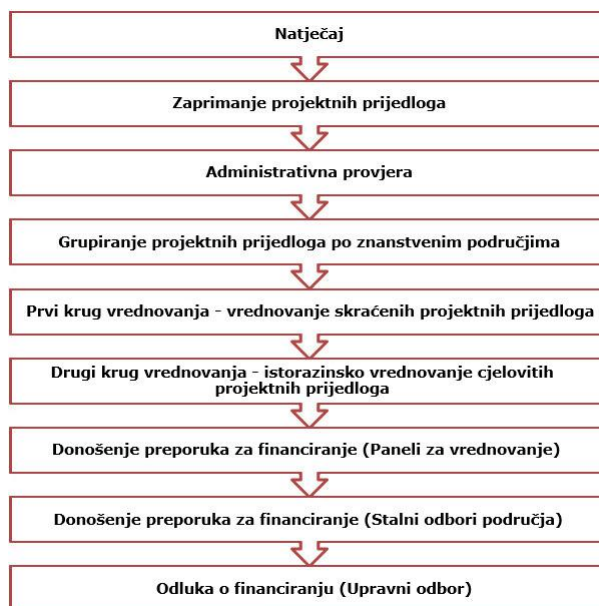
- Are the senior personnel (PI, co-PI) qualified?
- Is the proposed project feasible?
- Are the requested funds appropriate?
- How will the project be evaluated?

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14 Reasons Why Proposals Fail

- Deadline not met
- Guidelines not followed
- Nothing intriguing
- Did not meet priorities
- Not complete
- Poor literature review
- Appeared beyond capacity of PI
- Methodology weak
- Unrealistic budget
- Cost greater than benefit
- Highly partisan
- Poorly written
- Mechanical defects

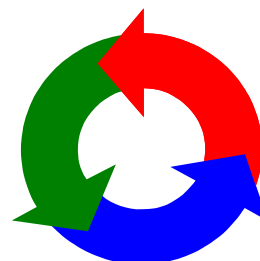
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Recycle your Rejected Proposal

- Success means having one in three grants funded
- A rejected proposal does not always mean the idea was rejected
- Obtain reviewer comments
- Call the program officer
- Rewrite, revise, resubmit



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Just Do It!

