

Essential Research Skills



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December 24th-26th, 2012



CV :: Cover Letter :: Scholarships



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Before you start

How to prepare yourself

Lab structure

Structure of research laboratory in North America

Scholarship

Types and conditions

CV

Structure and notes

Cover Letter

Structure and notes

Important activities

What to participate in!

Admission

Application and admission processes

CV :: Cover Letter :: Scholarships

Before you start:

- ① Work hard in your courses to get the best grades
- ② Realize what you need
- ③ Prepare yourself for language (*e.g.* English) proficiency tests
- ④ Participate in all possible kinds of activities (conferences, training, articles, *etc.*)

CV :: Cover Letter :: Scholarships

Before you start:

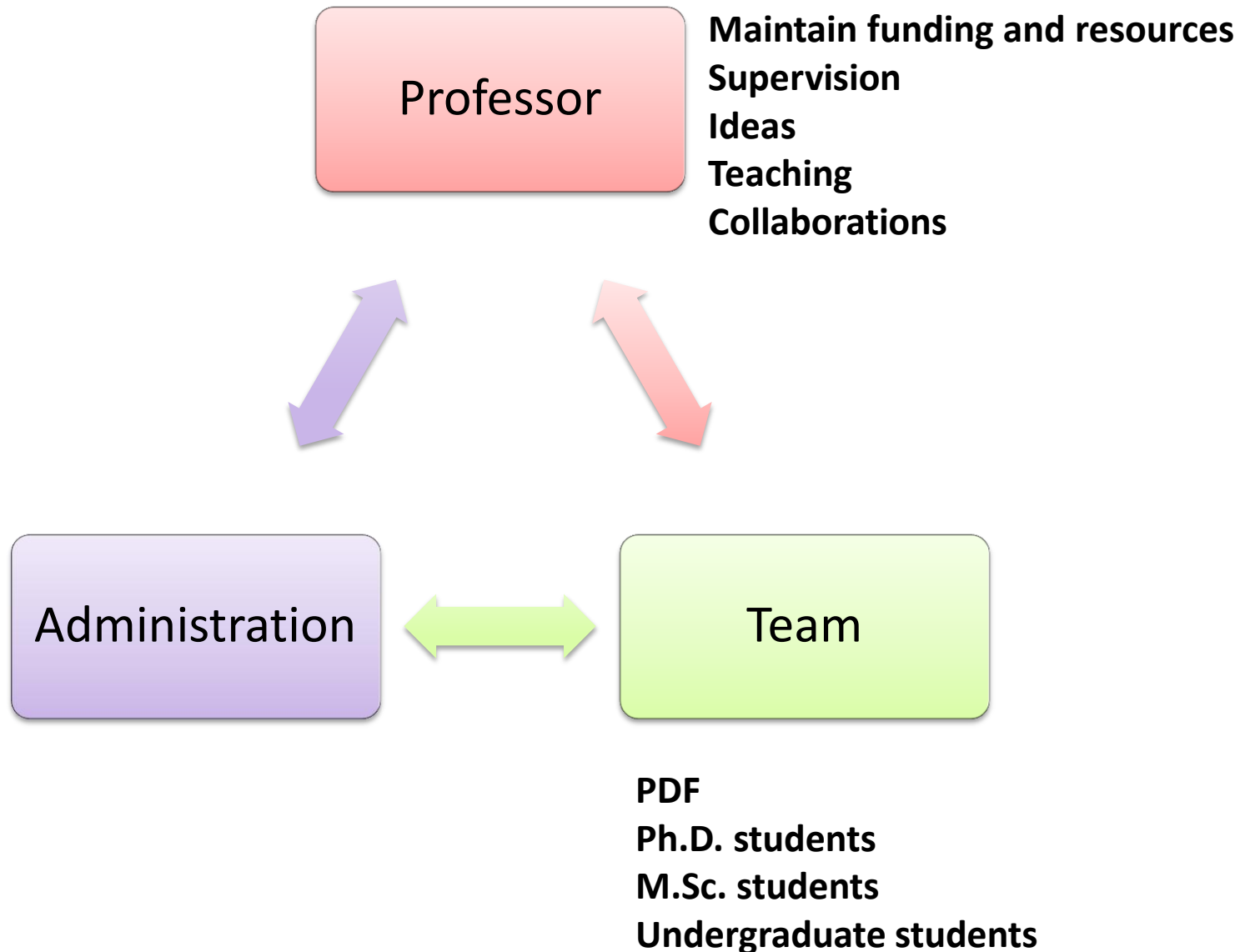
- ⑤ Set-up connections
- ⑥ Be prepared to get recommendation letters

CV :: Cover Letter :: Scholarships

Then:

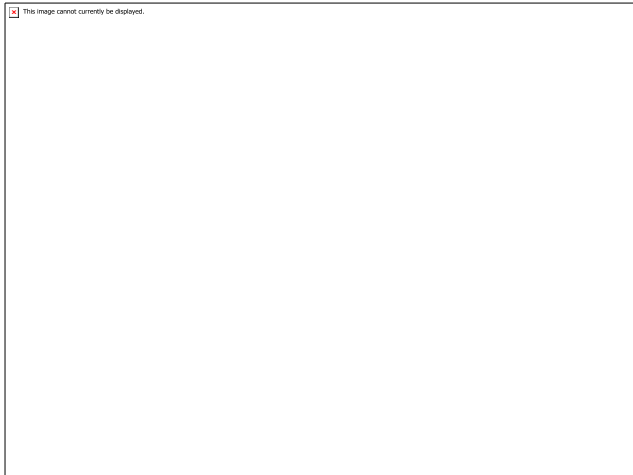
- ① Write CV and Cover Letter
- ② Apply for governmental and non-governmental scholarships, **BUT KNOW FIRST WHERE AND WHEN**

Structure of research labs in North America



Scholarships: Definition and Types?

A scholarship is an award of financial aid for a student to further their education. Scholarships are awarded on various criteria, which usually reflect the values and purposes of the donor or founder of the award. Scholarship money is not required to be repaid.



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WIKIPEDIA
The Free Encyclopedia

Scholarships: Definition and Types?

Merit-based

- Academic record

Need-based

- Financial situation

Career

- Specific field of study

College

- Academic record

Scholarships: Common Terms?

Bursary

- Paid to individuals who cannot pay their education fees

Fellowship

- Doctoral researchers
- Post-doctoral researchers
- Visiting professors

Financial Aid

- Scholarships
- Grants
- Loans



Scholarships: Factors?

Nationality

**Academic
record**

Field of study

Achievements



Scholarships: Be aware of?

Conditions

Re-pay

Interest

Acknowledgments

Benefits

CV: Definition and Structure?

Résumé is a synonym but usually for shorter CV

Curriculum vitae is an overview of the experience, qualifications and scientific achievements of the applicant.

It is usually followed by an Interview 😊

.....If Successful 😞

CV: Definition and Structure?

Contact Information

Name :: Address :: **E-mail** :: Phone



Educational qualifications

Degrees and positions held or in progress



Research and Professional Experience

Concisely describe experience and achievements


CV: Structure?

Training Courses



Publications

Peer-reviewed ::::: Articles :: Book Chapters :: Patents



Participation at Scientific Conferences

Posters :: Oral Presentations

CV: Structure?

Scholarships and Awards



Competence

OPTIONAL



References

EXTREMELY IMPORTANT

CV: Be aware of?

**Very
Selective**

**Very
Careful**

**Very
Honest**

**Be Aware
of the
Screening
Process**

Consistent

Cover Letter or Motivation Letter: Definition and Structure?

This letter introduces the applicant and explains his potential in this particular job.

It must express your interest in this position.

USUALLY ONE PAGE

Cover Letter or Motivation Letter: Definition and Structure?

Header

Contact
information of the
sender and
recipient

Introduction

What you want!
Specific position?
Must be VERY
ATTRACTIVE

Body

Summarize your
experience and
qualifications
Why are you the
best applicant?
What can you do
in this particular
job?

Closing

Polite
Enthusiastic
Questions or next
steps

Language Proficiency Tests: Most common ones?

The ability to speak, write and communicate in a specific language, most commonly English, then Germany and French.

ONE OF THE ADMISSION REQUIREMENTS FOR MOST OF THE GRADUATE SCHOOLS IN NORTH AMERICA

Language Proficiency Tests: Most common ones?

Examples include:

- ✓ IELTS (International English Language Testing System)
- ✓ TOEFL (Test of English as a Foreign Language)
- ✓ GRE (Graduate Record Examination)

Important activities

- ① Participate in scientific conferences
- ② Be a member of national and/or international organizations
- ③ Training courses (theoretical and practical)
- ④ Participate in research activities

Important activities

⑤ Teaching

⑥ **THE MOST IMPORTANT IS TO HAVE YOUR NAME
IN A PEER-REVIEWED ARTICLE AND TO HAVE AN
OUTSTANDING ACADEMIC RECORD**

Connections?

WE MISS COLLABORATION ESSENCE



Applying for M.Sc., Ph.D. or PDF Program?

- ① **Select an interesting research area**
- ② **Look for active professors (H-index, publications, reputation, web site, funding and facilities)**
- ③ **Highly ranked universities and institutes**

Applying for M.Sc., Ph.D. or PDF Program?

Application process:

① Department:

Risky, better chance, easier

① Professor:

CV, cover letter, transcript, publications

Applying for M.Sc., Ph.D. or PDF Program?

Admission requirements:

- ① **Grade in B.Sc.**
- ② **Language Proficiency tests, GRE**
- ③ **CV**
- ④ **Three references**
- ⑤ **Application fees**

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Protocol :: Proposal :: Study



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Protocols

Types, importance and structure

Proposal

Types and structure

Proposal

Detailed steps on how to build up a proposal

Project

How to start a research project?

Protocol: Definition and Importance

Before starting your experiments, it is usually required to present a protocol 😞 but it actually helps a lot 😊

The protocol is a written recipe for the purpose of the study, materials to be used and a detailed experimental procedures of the study.

It must be concise and accurate

Importance:

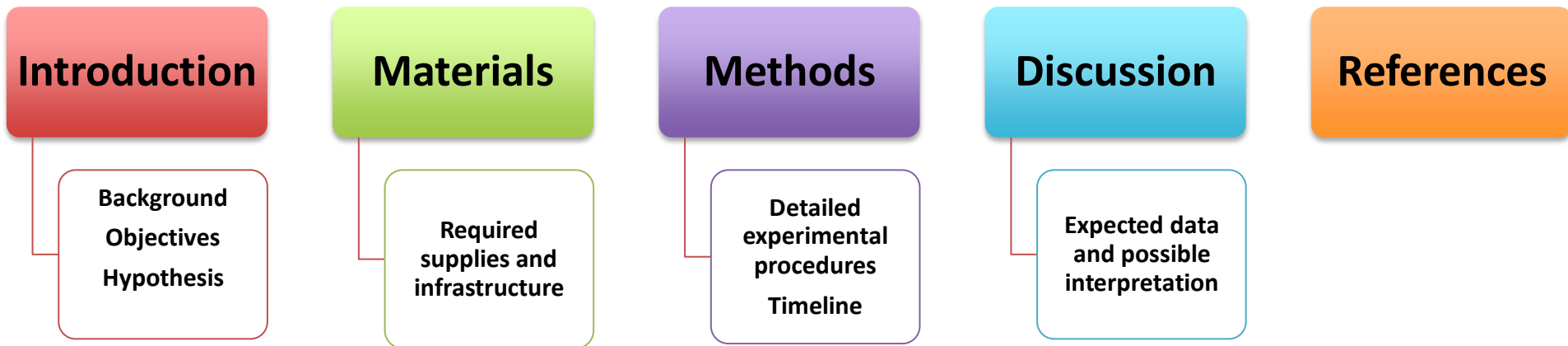
- ① The idea becomes clearer and attract other interesting ideas
- ② Enrich knowledge
- ③ Collect all the required materials
- ④ Realize the feasibility of the project
- ⑤ Aid in writing the future manuscripts, reviews and patents

Protocol: Types

Experimental

Instrumental

Protocol: Structure



Types of proposals

**EVERY GRANT HAS SPECIFIC
FORMAT AND REQUIREMENTS**

Basic research

Infrastructure

Technology
transfer and
commercialization

Travel

Others

Proposals Structure

1. Abstract

The proposal abstract (one page maximum) outlines the proposed project and should appear at the beginning of the proposal.

It should be brief.

Proposals: Types and Structures?

1. Abstract

The proposal abstract should include:

1. Summary on the benefits of your project and the expected impact
2. Description of the project in view of the local need.

Proposals Structure

1. Abstract

The proposal abstract should include:

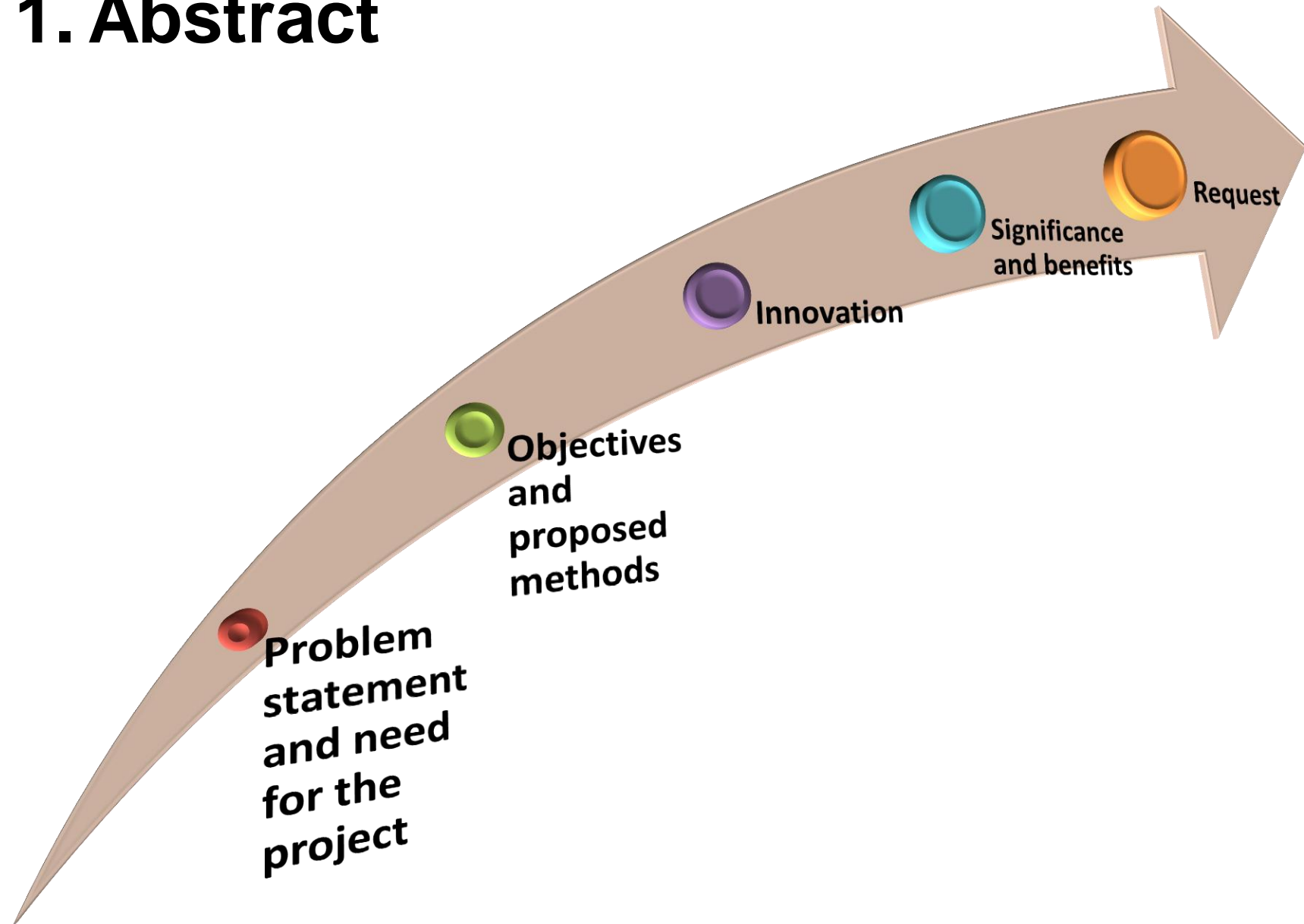
3. Summary on your request.

4. Summary on your objectives and proposed methods.

5. How your project is innovative

Proposal Structure

1. Abstract



Proposal Structure

2. Introduction

- ① Problem statement and significance
- ② Background
- ③ Describe the project
- ④ Identification of the applicant
- ⑤ Outline the portion of the problem you plan to deal with.

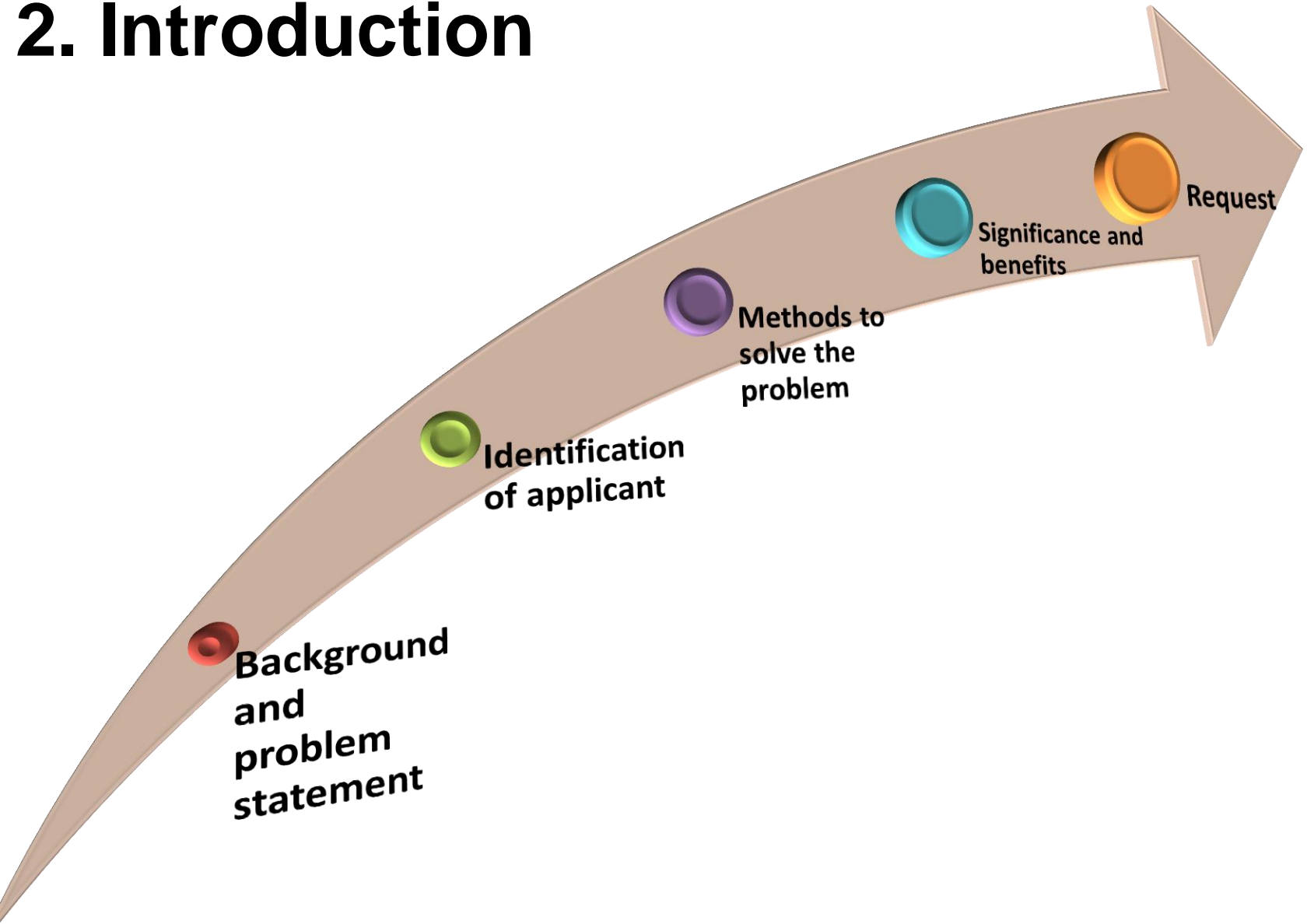
Proposal Structure

2. Introduction

- ⑥ Include Expert opinions and literature review.
- ⑦ Determine the major focus of the proposed project.

Proposal Structure

2. Introduction



Proposal Structure

3. Wider Objectives

Objectives describe clearly the expected general outcomes of the project

Objectives should be achievable within the project duration

Proposal Structure

4. Statement of the Proposed Research “SMART, ALWAYS SMART”

- ① Detailed objectives
- ② Specific, Measurable, Achievable, Realistic and time-limited
- ③ Well-planned

Proposal Structure

4. Statement of the Proposed Research “SMART, ALWAYS SMART”

- ④ Brief
- ⑤ High quality
- ⑥ The expected results against the objectives

Proposal Structure

5. Methods & Procedures

The methods section is often the longest part of proposal. It should contain:

- ① How to achieve objectives (proposed activities)
- ② Description of the methods
- ③ Rationale to project
- ④ Implementation team (title and background)
- ⑤ Timeline

Proposal Structure

6. Facilities & Equipment

Facilities available for the project (equipment, specialized computers, laboratories, space, and unusual services).

Availability of other infrastructures, personnel, *etc.*

Proposal Structure

7. Budget

The amount of money required

The budget should contain an explanation or calculation showing how you came up with the total project budget for each budget line.

Itemize and account for all costs

Proposal Structure

7. Budget

Justify budget items

Try not to overestimate or underestimate resource needs

Salaries, rental, lease, or purchase of equipment, office supplies, travel, *etc.*

Proposal Structure

8. List of References

① Endnote

② Consistency

③ Recent

④ Typos

Proposal Structure

9. Appendices

① Tables, graphs

② CV

③ Publications

④ Support letters (organizations, collaborators, *etc.*)

⑤ Any other additional documents

How to start a research project?

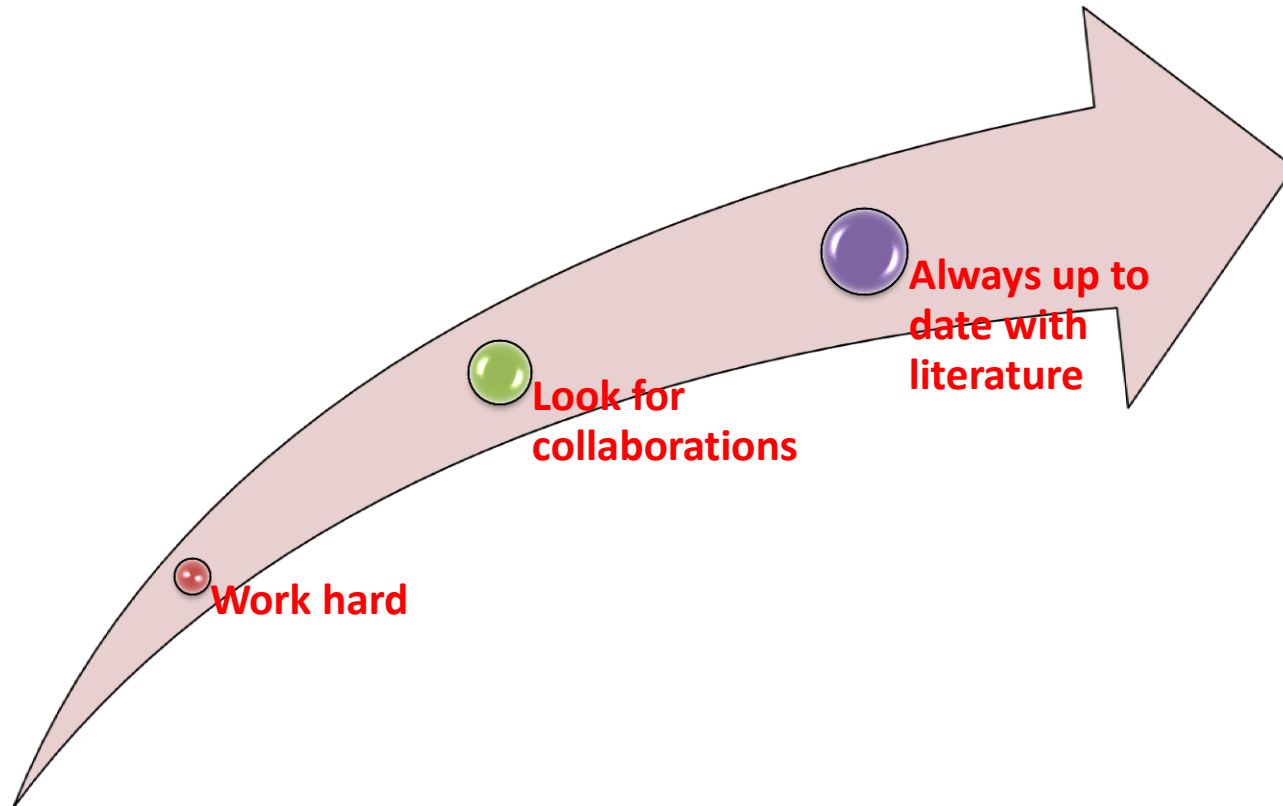
Seek for a
problem

Novelty

Possibility

Significance

Support



Conclusions

