

Career Development Workshop

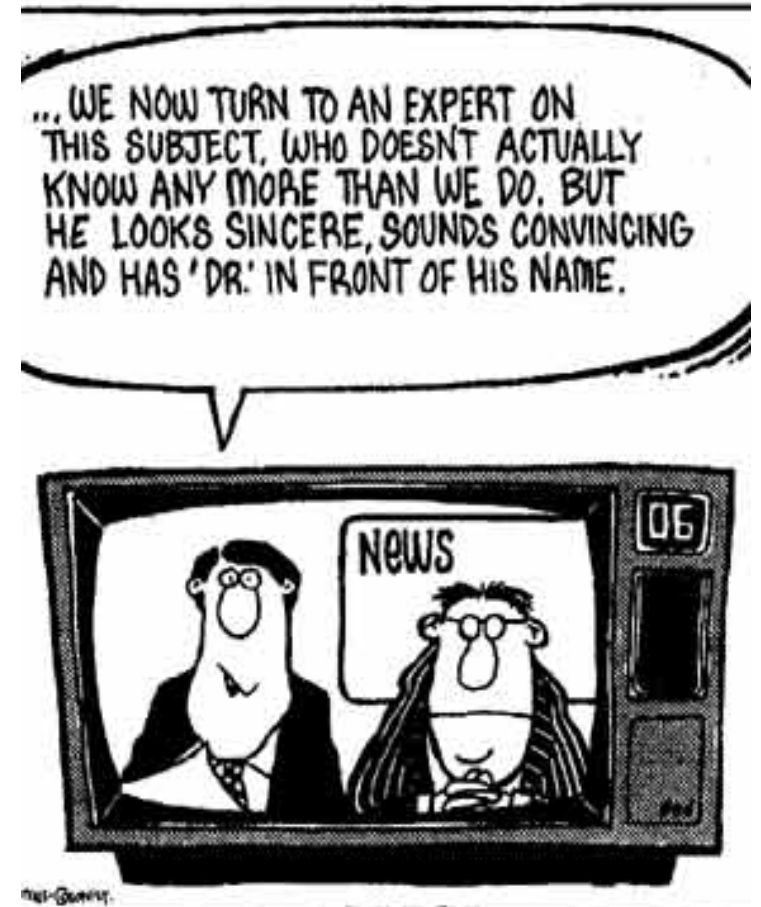
Ibrahim Abdel-Messih Khalil
University of Washington

Institute For Health Metrics
and Evaluation (IHME)



Outline

- My CV ... my story, my branding!
- The interview adventure
- Scanning my field-
scientific interest, fellowships, grants...etc.
- Scientific Proposal writing
- Grant writing skills
- Research ethics and GCP
- Group Exercise- A successful application





You

- Who are you?
 - Your expertise/interests
 - Your career/life goals
 - Your position/resources
- Your proposal should fit into your life plan

What is your life plan? Do you need to develop a strategic plan?

Your Strategic Plan

- A strategic plan has three parts:
 - Where are you today?
 - Where do you want to be in the future?
 - How do you get from here to there?

A strategic plan is a roadmap for your life

Pop Quiz!

What is the initial amount of time an employer takes to review an applicant's C.V / Resume?

Answer:

- 15 – 20 seconds minimum
- 45 seconds maximum



What is Captured in the First 10-15 Lines of Your Resume?





Resume vs. Vitae

- **Length: Short**
- **Content: All-inclusive summary of skills, experiences and education**
- **Purpose: to get an interview or employment**
- **Length: As long as it takes**
- **Content: Area-specific listing of education and academic background**
- **Purpose: promotion and tenure, grants, specialist positions, awards, etc.**



Matching up your CV with the proposal/organization

- It is not 'one size fits all', you need to tailor your CV to each subject/position you apply for
- Research the organization. Do they have a mission statement or core values? What will they be looking for in you? Who works there at the moment? What are they passionate about?



Resume- hidden messages

Resume

- Neat
- Well-organized
- Error free
- Professional appearance

You

- Neat
- Well-organized
- Attention to detail
- Careful & Competent

The first visual impression of your CV is important!



General Set-up Suggestions

- Same font throughout (may vary sizing)
- Font size: 12 point best
- Regular paper when printed
- No underlining
- Single sided
- Margins – 1” all around
- Use bolding and caps to have things stand out
- Number your pages
- No graphics
- Full name on every page

Tips for a CV

- **Clear** – well organized and logical
- **Concise** – relevant and necessary
- **Complete** – includes everything you need
- **Consistent** – don't mix styles or fonts
- **Current** – Up-to-date





What should be on a CV?

- **Start with contact information**
 - Full name, Permanent mailing address, Phone numbers
 - E-mail address that won't expire
- **Education**
- **Honors and Awards**
- **Professional Experience (employment)**
- **Publications and presentations**



Other sections for Content

- **Extracurricular and volunteer experience**
- **Certifications and licensure**
- **Professional affiliations**
- **Professional activities**
- **Research**
- **Added qualifications**

References

- **Ideally, one academic and your manager**
- **Ask permission from your reference and let them know what position(s) you've applied for**
- **Use relevant references if possible**
- **You can say 'references available on request' rather than including contact details if you wish**

Action Verbs

created instructed analyzed produced
negotiated designed calculated maintained
administered controlled reviewed
consolidated delivered founded increased
studied invented supplied detected
programmed recommended distributed
developed solved prepared installed
selected arranged formulated solved started

Gaps in Your Resume



Suzy Q. Student

1234 River Run Road
Chattanooga, TN 37343

413-425-5555
suzyqstudent@utc.edu

Objective: To obtain an entry-level Human Resources position

Education: **University of Tennessee at Chattanooga**
Bachelor of Science in Business Administration: Human Resource Management

- Expected Graduation Date: May 2007
- GPA 3.1

Relevant

Experience: **Human Resources Intern** June 2005 – August 2005
Blue Cross Blue Shield of Tennessee Chattanooga, TN

- Assisted with updating employee personnel files
- Screened job applicants
- Observed the Human Resource Manager interviewing applicants

Other

Experience: **Sales Associate** May 2003 – Present
Abercrombie & Fitch Chattanooga, TN

- Train new employees
- Participate in interviewing and selecting employees
- Oversee inventory and auditing of products
- Open and close store

Student Worker August 2002 – May 2003
UTC College of Health and Human Services Chattanooga, TN

- Performed internet research
- Organized office file, records, etc.
- Responded to office inquiries
- Answered a multi-line telephone

Honors:

- Golden Key Honour Society, 2003 - Present
- Phi Eta Sigma Honor Society, 2004 – 2008
- Dean's List, 2003 – 2007

Activities:

- Society for Human Resource Management, 2005 - Present
- Student Government Association, Treasurer, 2006 – 2007
- Chattanooga Soup Kitchen, 2003 – 2005



Covering letters

- **Never send a 'naked' CV**
- **Qualities of good covering letters:**
 - no more than $\frac{3}{4}$ of a page of A4
 - addressed to a named individual
 - specific for particular application even with a template
 - written in formal business style
 - well laid out, clear and easy to follow
 - perfect spelling and grammar
 - good quality paper

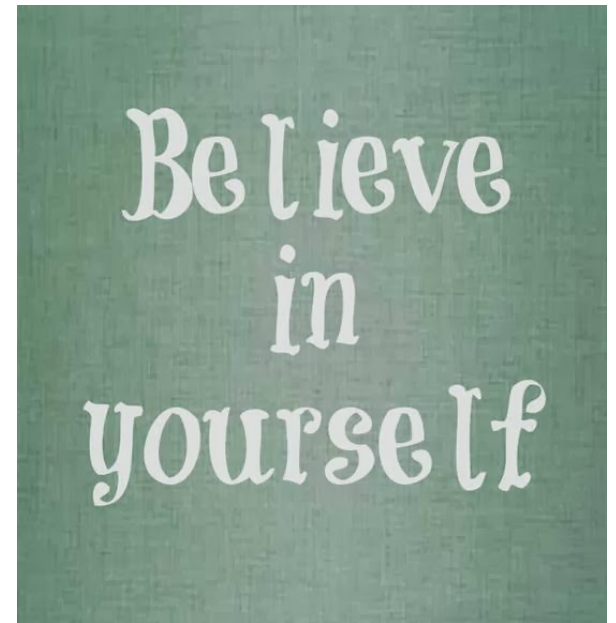
Letter of application

- Used when asked to ‘apply in writing’ or ‘send CV and cover letter’
- 1 side of A4
- Opening paragraph – motivation for the job/fellowship/course or grant
- Background skills and experience- show knowledge and highlight your skills
- ‘Matching up’ with job description and what you can offer
- Your availability

Preparation for an Interview

“if you fail to prepare, be prepared to fail”

- believe in yourself – **think positive!**
- In front of your mind
 - achievements – academic, employment etc....
 - strengths and “areas for development”
- **visualize** a successful outcome
- **practice** answering questions – talk to yourself
- **Research** the employer and the job
- **Know** your application inside out
- **Why** do you want the job?
- Your future **ambitions**
- At least **two examples of each skill** they are seeking



Practicalities

what kind of interview will it be?

who will be doing the interview?

what will you wear (smart)?

on the day

- copy of CV/application and list of your questions

- plan your journey

- arrive 15 minutes early

- switch off your phone

travel arrangements

- check location

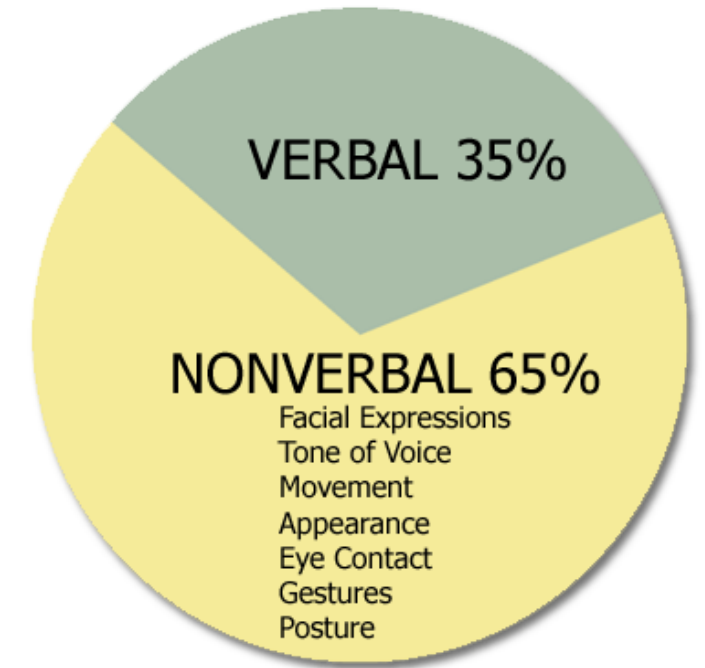
- plan your route

- check timetables/book ahead- give yourself plenty of time

be polite to everyone

Non-verbal communication

- at least as important as verbal
- **firm handshake** and genuine **smile**
- **appearance** – neat, clean, polished
- make and hold **eye contact** with the interviewer
- confident **tone** of voice
- **speak clearly**, measured pace and project your voice
- sit with an **alert** but relaxed posture
- demonstrate **interest**



first impressions count – the first five minutes are crucial



Interview

- **Breaking the ice discussion**
- **Walk me through the resume/Tell me about yourself**
- **Why do you want to apply?**
- **Explanation of the position**
- **Competency questions**
- **What do you like to ask me about?**



Telephone interviews

- be **flexible** in arranging a time
- take the call in a **quiet room**, no interruptions, table in front of you with paper and pen
- have your **CV/application form** in front of you
- have your **examples** for competency questions ready
- **listen** carefully
- speak **clearly**, don't rush
- don't be afraid of silences



Typical competency question #1

- *“describe a challenging project, activity or event which you have planned and taken through to a conclusion. Include your objectives, what you did, any changes you made to your plan and how you measured your success”*
- structure your answer using **STAR**
 - **s**ituation
 - **t**ask = objective
 - **a**ction = what I did
 - **r**esult = what happened

Other competency based questions

- **teamwork**

“can you think of a recent example where you have worked effectively as part of a team? What was your role. What challenges did you face?”

- **communication**

“describe a situation where you had to negotiate to achieve a desired outcome”

- **initiative**

“give us an example of an occasion when you have come up with a new idea or process”

- **persuasion**

“tell me about an occasion when you have persuaded others to adopt your course of action”

- **flexibility**

“describe a time when you have had to deal with a changed direction or deadline mid way through”

Typical question #2

- *“describe a team in which you have worked with other people. How would you describe your contribution?”*
- structure of your answer
 - **individual** role
 - what skills did **you** demonstrate?
 - consequences of **your** actions
 - **interactions** with the team

Typical question #3

- *“Describe your most significant non-academic achievement. Why did you regard it as significant?”*
- structure of your answer
 - **importance** of the situation for you
 - evidence of a **goal**
 - **motivation**
 - **obstacles** overcome
 - **enthusiasm**
 - **what skills/aptitudes** have you gained from the experience?



Typical question #4

- *“why do you want to apply for this job? What do you have to offer this role?”*
- **sell** yourself – but don’t hype!
- know the work involved and have researched the company
- self assessment of your strengths
- think what contribution you could make to the aims of the business

Have you ever had a bad experience with an employer?

“Yes. I had a temp job over the summer and my boss was away a lot, which meant I was basically expected to do her job as well as mine, and I was completely overloaded with really boring, mundane tasks. I posted something about the situation on my Facebook page and got the sack.”

- what is wrong with this answer?
- how could the question have been answered?

... a better answer

“I had a summer office job and my boss was away a lot. That meant that I had to take responsibility for her work as well as mine, which gave me a lot of interesting experience. However I also had to do my own job and there was no extra support, so I was working late most evenings (without extra pay) and occasionally at weekends. I eventually found it too stressful and decided to leave. But I learnt a lot from that experience about managing time and the need to prioritise.”

Your questions for the interviewer

- **Always** have some **interesting** questions ready
- do your **research** on the company – especially recent news
- who, which departments would I be working with?
- How do you see the company developing in the future?
- what is the best thing about working here?
- Don't ask about questions already answered in material sent to you e.g. pay, holidays

End of the interview

- thank them for seeing you
- remain confident throughout
- afterwards
 - reflect on and learn from the experience – what went well/less well, what will I do next time?
 - note any difficult questions
- ask for feedback if you get rejected

General application writing

Groundwork

- **Know your field:**
 - **What is the current state-of-the-art**
 - **Who are the top ten researchers**
 - **What they are doing right now**
 - **Where they get their funding**
 - **What they consider to be the key research issues**
 - **Who would likely review your proposal**
 - **What are the grant opportunities**



Networking

- Use your contacts from your work experience/course/friends
- Use social networking sites such as [LinkedIn](#), upload a portfolio of your work onto it
- Attend events, keep business cards and keep in contact



DON'Ts

- **Rush**
- **Wait until last minute (1 month) to contact program directors**
- **Make the proposed work (research and education) too broad**
- **Make the proposed work too narrow**
- **Ask for too much (or too little) money**
- **Ignore rules (Grant Proposal Guide) and misc. items –
violation of the GPG rules *will* result in return without review**



What is Research?

- Research is the *process* of finding out something that we (everyone) don't already know
- Scientific research builds upon the extant knowledge base and it is methodical, repeatable and verifiable
 - Methodical - you can specify in advance of the research a method to accomplish your objective
 - Repeatable - not a “strange” event
 - Verifiable - tangible evidence



The Selected Research Topic

- **It must be research**
- **It must not have been done before**
- **It must be significant**
- **There must be higher than probability zero that you can do it**
- **It must lend itself to a viable research plan – there is a research methodology**
- **You must have the facilities to accomplish the research**

Why write a study protocol?

- **Check**
 - **if objectives can be achieved**
 - **feasibility of the study**
- **Prevent failure to collect crucial information**
- **Lays down the rules for all partners (quality)**
- **Obtain approval of ethical committee(s)**
- **Application for funds**

HYPOTHESIS

Definition: a proposed explanation for a phenomenon

NOT: Xist is interesting: let's study it.

BUT: Xist regulates X chromosome inactivation by binding to the X chromosome to be inactivated

Be specific and focused

Do not just use a technique to address an experimental area without a well formulated hypothesis (no fishing trips)

The Research Objective

- **How to do it wrong (“actual” submissions):**
 - **This project aims to advance the research in predictive modeling for manufacturing process optimization.**
 - **The proposed study will significantly advance the theory of random fields.**
 - **This study will develop modeling and simulation-based technologies for building construction.**
 - **New methods in robust optimization are proposed for optimizing complex models under uncertainty.**

The Research Objective

- **Four acceptable ways to do it right:**
 - The research objective of this proposal is to test the hypothesis H .
 - The research objective of this proposal is to measure parameter P with accuracy A .
 - The research objective of this proposal is to prove conjecture C .
 - The research objective of this proposal is to apply method M from field Q to problem X in field R .

Beyond the Research Objective

- Your proposal must address four critical questions for reviewers:
 - *What is the proposal about?*
 - Be sure to include clear statements of both research and educational objectives
 - *Will the proposed approach accomplish the stated objectives?*
 - Be sure the reviewers are evaluating your approach based on your objectives
 - *Can the PI carry out the proposed approach?*
 - Preliminary results and previous work argue this
 - *Is it worth doing?*
 - Make the argument through the broader impact statement

Grant writing skills

Why Would You Want to Write a Grant?

- **To Have the Resources and Time to Pursue a Question that you believe is important**
- **To protect your time and give you freedom to do intellectually stimulating work**
- **Access to additional resources -equipment, travel, field work, and staff**
- **To pay your salary, Increase employability, Support for student salary and tuition**
- **As a measure of academic accomplishment- Publications**

Grants

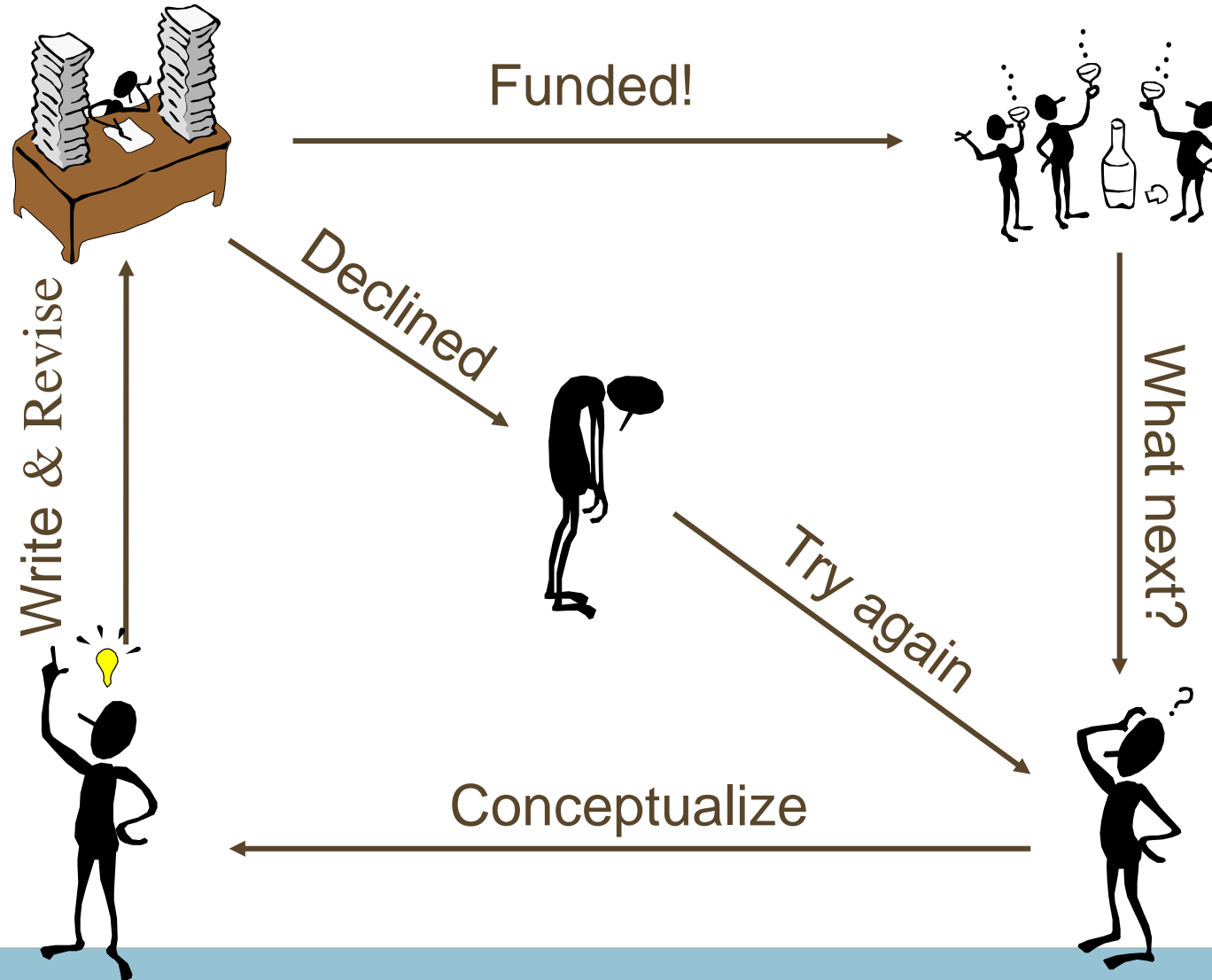
- submitted by institution on behalf of PI
- funded to institution
- indirect costs apply
- final report required
- agency selects reviewers
- full compliance w/ university regulations (e.g. human subjects, fiscal oversight, PI regulations)



Overview: The Funding Process

- Identify an agency with a **mission** that matches your interests, and find a relevant CFP
- Understand the **mechanics** of the submission process
- Your idea will be presented to the funding agency in the form of a written document, “**The Proposal**”
- A set of **reviewers** examines your proposal and makes a recommendation to the funding agency or a score for NIH)
- The **program officer** makes final decision about funding and funding amounts

The Proposal Cycle



What Makes a Good Grant Proposal?

- **A good idea or compelling project**
 - Does it address an important problem?
 - Will scientific knowledge be advanced?
 - Does it build upon or expand current knowledge?
 - Is it feasible ...
 - ◇ to implement?
 - ◇ to investigate?
- **Research addresses a significant problem**
- **Clear description of the research activities**
- **A good fit with funding agency's priorities**



What Qualities Characterize a Successful Grant Writer

- **Good research skills**
- **Salesmanship**
- **Good communication skills**
- **Persistence**
- **Ingenuity and flexibility**
- **Administrative skills**
- **Good human relations**



Writing Tips: Tricks of the trade

- Read successful grants
- Tell a story . . .
 - Build your argument
 - Help reviewers care
 - Make the link between aims and products clear
- Sit in on mock reviews
- No typos, each page a thing of beauty . . .
- Involve mentor, co-investigator, biostatistician early (6-12 mos)



What Reviewers Look For **First**

- What's the title? Is it interesting?
- Who is the applicant?
- Which institution(s) is the applicant affiliated with?
- What's the basic idea? Is it within my area of expertise?
- Is the application “Reviewer-friendly”?

*More is not better!
Make it easy for the
reviewers to evaluate
your proposal*



The key to success in grant writing is to engender enthusiasm in the reviewer – who then becomes an advocate for your proposal. Therefore, always write your application for the reviewer, NOT yourself

Factors We Can't Control

- **Internal politics within the funding agency**
- **Stiff competition from other applicants**
- **Limited availability of funds for certain program areas within funding agency**



Common Components of a Research Proposal

- Summary / Abstract
- Introduction / Statement of the Problem
- Review of the Literature
- Methodology
- Data Analysis
- Ethical Consideration
- Bibliography
- Organizational Capability
- Timeline
- Budget/Cost Effectiveness
- Appendices



Cover/Title Page

- **Use sponsor agency form if applicable**
- **Use required guidelines**
 - **Project title**
 - **Organization name**
 - **Sponsor agency name (if applicable)**
 - **Submission date**



Project Summary / Abstract

- One page
- State problem
- Propose solution
- State project objectives and significance
- Some organizations requires statement of intellectual merit and broader impacts





Making a successful application: The Abstract

- **Summary of the entire proposal – write it last!**
- **Understandable by researchers outside the field – don't underestimate the importance of the lay abstract either!**
- **Will be the first thing read by primary reviewers**
- **May be the ONLY thing read by other committee members (but not at MRC of course)**
- **Will influence the way reviewers approach the rest of the proposal**

Introduction

- **What specific need or problem does your research address?**
- **How was the need identified and its significance?**
- **Who will benefit from the proposed research project?**
- **What are the research questions and/or objectives of the proposal**



Project Research Questions / Objectives

- **Bullet list research questions or objectives**
- **Should be action-oriented**
- **Relate to identified needs**
- **Relate objectives to sponsor agency's goals and priorities**

Review of the Literature

- **Literature review should relate to:**
 - **The topic or problems area**
 - **Theory area**
 - **Methodology**



Methodology

- **Subjects – Describe Sample**
- **Design – Type of Design Used and Sequence of Events**
- **Data Collection – Description of variables, control, measurements**

Data Analysis

- **Describe how collected data will be analyzed**
- **What are the effects to be analyzed**
- **Analysis should meet project objectives or**
- **Should be linked to the hypotheses and clear how each hypothesis will be tested**

Ethical considerations

- **Informed consent**
 - translated in local lay language
- **Confidentiality**
 - coding data collection instruments without identifier
- **Data storage and protection**
- **Ethics committee**

Plan of Operation

- Describe activities to be undertaken
- Identify person responsible for each
- Describe oversight and management of project
- Describe qualifications of key personnel

Organizational Capability

- Describe your organization, its history, and its mission
- Describe organization's strengths in terms of staff, facilities, resources
- Describe prior experience relevant to the proposed project

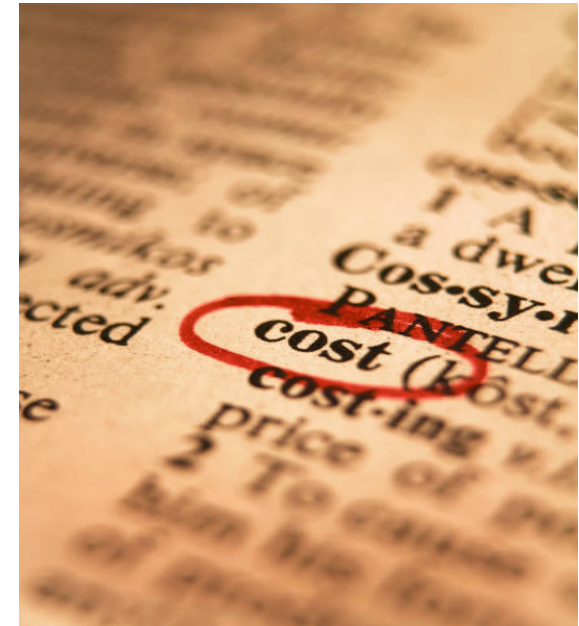
Timeline

- Use chart or table
- Illustrate each phase of implementation
- Show when results will be achieved



Budget and Cost-Effectiveness

- Make sure budget coincides with narrative
- Make sure sponsor will support budget categories you propose
 - Some sponsors may disallow equipment, overhead or other costs
- Provide a budget narrative
- Explain how you arrived at figures in each category
 - How fringe benefits are calculated
 - How you calculated travel costs
 - How you estimated equipment costs



Common problems in Grants proposals

(more difficult to remedy):

- **Research problem itself**
- **Scholarly background to the problem—uneven or inadequate or erroneous**
- **Writing unclear—too much jargon, not accessible, or not well organized**
- **Methods and work plan unclear or undefended**
- **Lack of specificity**



N.I.H. Epidemiology & Diseases Control 1 (EDC-1) Study Section

Feasibility Issues Raised as Major Concerns in 48 Discussed Grants

Inadequate Statistical Power	22/48	(46%)
Study Sample Not Representative	6/48	(13%)
Likely inability to recruit or retain enough subjects	7/48	(15%)
Poor Productivity of Investigators	7/48	(15%)



Scientific Issues Raised as Major Concerns in 33 Discussed Grants: EDC-1 Study Section

Poor Questions 7/33 (21%)

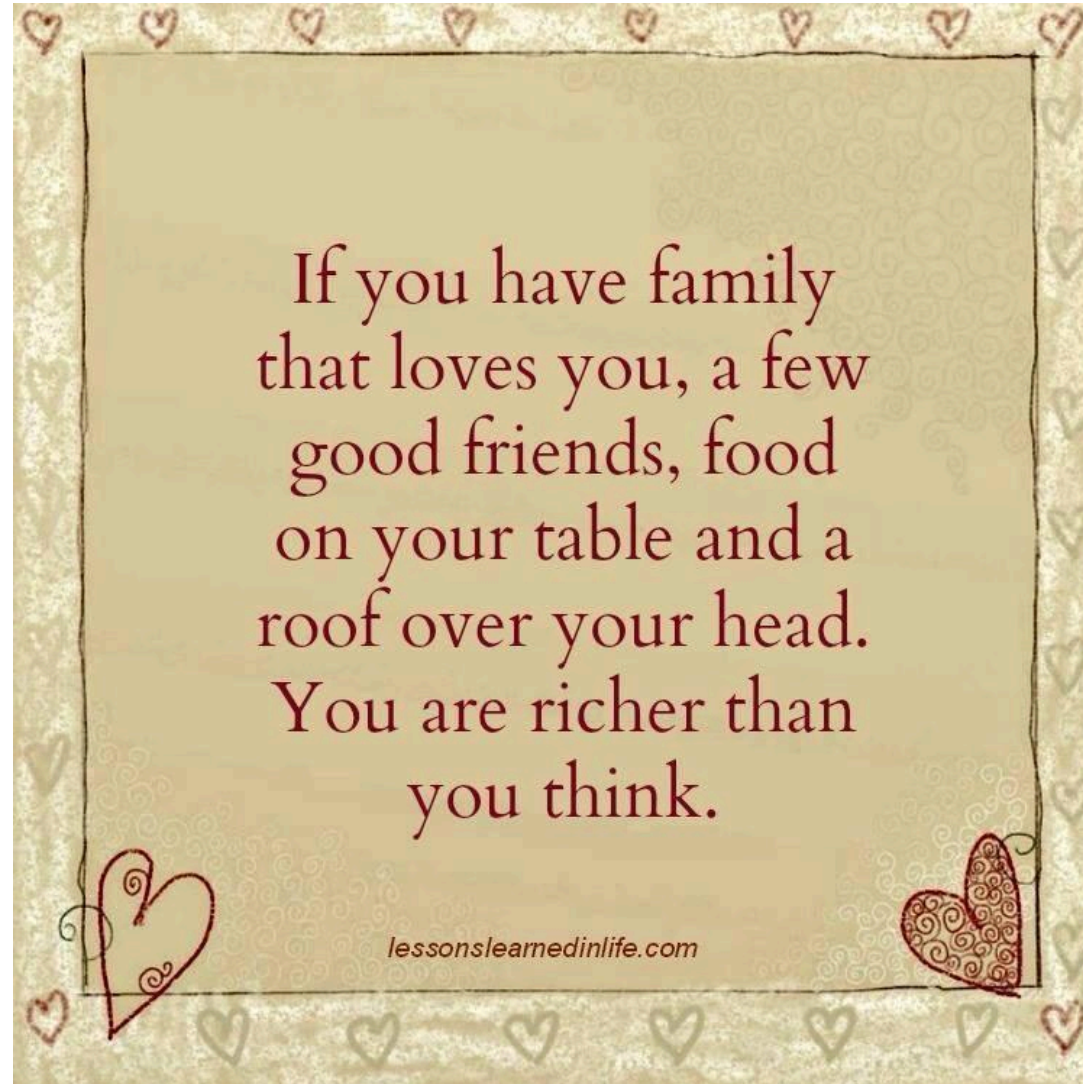
A Poor Approach to the Question 13/33 (39%)

Human Studies Concerns 1/33 (3%)

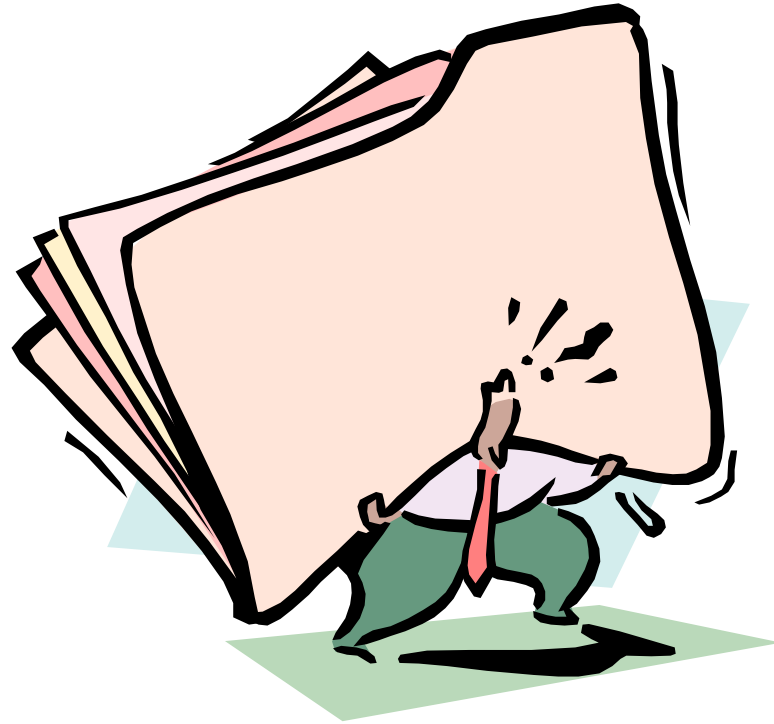
Hallmarks of an Outstanding Grant Application

- **Strong significance to an important problem in public health: IMPACT is high**
 - **High degree of novelty and innovation**
- **Strong track record by a well qualified applicant**
- **Clear rationale**
- **Relevant and supportive preliminary data**
- **Clear and focused approach that provides unambiguous results**
- **Careful attention to details**
 - **Fonts, clarity of data, error bars, spelling, etc**

Do not get discouraged or give up!



Progress/Final Reports



Annual Reports

- **Annual reports are required for ALL grants**
 - This includes: unsolicited, CAREER, MRI, special initiatives, ...
 - This includes grants that are beyond their initial active period, i.e., grants that are in a no-cost extension period
- **Annual reports must be submitted via FastLane 90 days PRIOR to anniversary (or by May 1st, whichever is sooner, for continuing grants)**
- **Annual reports MUST be submitted in the order in which they are due as they build upon previous report(s)**
- **No annual report = no increments, no supplements, no no-cost extensions, no new awards (for PIs or Co-PIs)**

Ethics

You have worked hard to establish your career, don't ruin it by a breach of ethics



Breach of Ethics

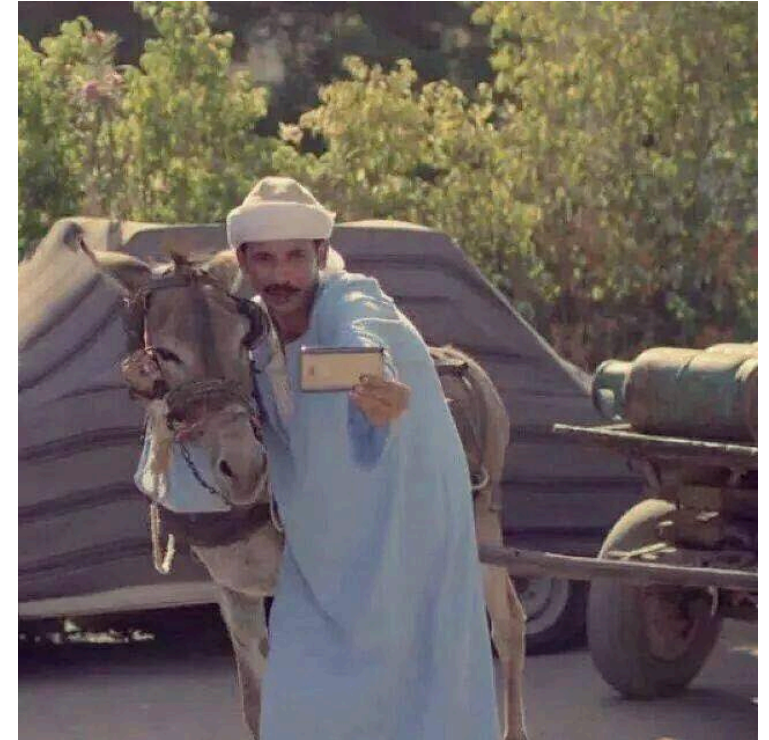
- **People who submit proposals to the Federal Government are held to high standards**
- **A breach of ethics can lead to**
 - **Being barred from submitting proposals**
 - **Fines**
 - **Jail time**
 - **Really being on the outs with your institution – getting fired, losing tenure**
- **Violation of some ethics laws is a felony**

Forms of Misconduct

- **Plagiarism - material copied without citation and quotation - if you copy it, cite it and off-set it; if you accept an award based on a proposal that includes plagiarism, you may have committed a felony**
- **Charge for work already done - can be a felony, do not charge twice for the same work**
- **Falsification of data and reports - changing data or results - be honest in all your annual and final reports and papers**
- **Fabrication - making stuff up - report only what is real**

Actual PI Responses

- **“It’s only a proposal. It’s not like it’s a publication.”**
- **“The reviewers are smart enough to know what is my work and what is someone else’s.”**
- **“My English teacher told me it’s not plagiarism if I change every seventh word.”**
- **“It’s not plagiarism; it’s just bad citation.”**
- **“It got funded before.”**
- **“I didn't have space for all the citations.”**
- **“I didn’t do it. My grad student/ undergraduate/ postdoc/grant writer/faculty colleague/secretary/ Co-PI/SRO/AOR/VP of Research/Dean/spouse wrote that section.”**
- **“It was ‘an act of lamentable carelessness’ and therefore not misconduct.”**



Examples

- **False charges**
 - **Never paid travel**
 - **Never commingle funds**
 - Don't mix business and pleasure expenses
 - Don't mix grant funds and personal business expenses
 - **Never charge for time not spent on a grant**
 - **Never bill items to your grant that shouldn't be billed to the grant**
 - **Never bill alcohol or entertainment to a grant**
 - **Never charge give-aways to a grant**



Examples, continued

- **Breach of confidentiality - never divulge confidential information**
 - Ideas conveyed in proposals
 - Names of panelists
 - Names of PIs
 - Never use information that you received in confidence

Plagiarism is bad, plagiarism from a proposal you reviewed is a breach of confidence—much worse

Ethics Training

- **It is highly recommended that you give your student researchers training in ethics - this protects you**
- **Do it with all your students**
- **Do it before they have a chance to do something bad**
- **Ask them to sign a letter of recognition that you have provided ethics training, that it covers specific elements of ethics, and that they know that you expect appropriate behavior**



What Makes Clinical Research Ethical

- **Community Partnership**
- **Independent Review**
- **Social Value**
- **Scientific Validity**
- **Favorable risk-benefit ratio**
- **Fair Subject Selection**
- **Informed Consent**
- **Respect for human subjects**





Community Partnership

To be ethical clinical research must involve the community in which it occurs.

- Community participation in planning, conducting and overseeing research and integrating results into the health system



Independent Review

- Investigators have multiple legitimate interests
 - Potential conflicts of interests.
 - Promote research
 - Protect subjects
- Independent review of the research minimizes these conflicts.
- Establishment of research ethics committees

Social Value

To be ethical clinical research must lead to improvements in health or advancement in generalizable knowledge

- Research without value includes:
 - Substantial overlap with prior studies
 - Intervention can never be implemented
 - Unimportant hypothesis
- Justification of value as an ethical requirement
- waste resources
- cannot justify exposing subjects to burdens or risks



Favorable Risk-Benefit Ratio

- Potential benefits enhanced
- Risks are identified and minimized
- If risks are reasonable to potential benefits to the individual, then proceed
- If no potential benefits to the individual, then evaluate risks against social benefit of knowledge gained – risk/knowledge
- Justified by principles of non-maleficence and beneficence



Types of Risks

- Physical
- Psychological
 - Survey research
 - Genetic testing
- Social
 - Discrimination as a result of breach of confidentiality
- Economic
 - Travel to clinic



Fair Subject Selection

- The scientific objectives of the study should guide inclusion criteria and targeted populations.
- Convenient (vulnerable) groups should not be selected.
- Groups cannot be excluded without scientific reasons.
- Higher risk is a reason to exclude certain groups.

Subject Selection and Recruitment

Selection and Recruitment should:

1. Distribute burdens and benefits fairly
2. Ensure social value of research
3. Enhance scientific validity
4. Minimize risks to subjects
5. Maximize benefits to subjects
6. Protect the vulnerable



Informed Consent

- Informed consent ensures that individuals themselves decide:
 - whether to enroll in research and
 - whether research fits with their own values, interests, and goals.
- Research on individuals who cannot decide: children and mentally impaired
 - Requires surrogate consent
- Justified by principle of autonomy



Respect for Enrolled Subjects

- The ethical requirements of research do not end with a signed consent document.
- Respecting enrolled subjects includes:
 - Protecting confidentiality
 - Permitting withdrawal
 - Providing new information
 - Monitoring welfare

Lets Write a grant proposal!