

# **CNS-UCSB *Traveling Technologies* Research Template**

## Supporting Documents

This file contains documents for mentors to use to support their intern's research:

- Research Goals Worksheet
- Presentation slides development guide
- Entry survey
- Exit survey

In addition, we suggest reviewing the Research Skill Development Framework developed by Willison & O'Regan (pages 402-3 of Willison, J. and K. O'Regan (2007) Commonly known, commonly not known, totally unknown: a framework for students becoming researchers. *Higher Education Research & Development* 26:4, 393-409. DOI: 10.1080/07294360701658609), to use in discussing research with your intern and clarifying your expectations for your intern. This is particularly advantageous for students new to the research process.

***Traveling Technologies Research Project***  
**Intern Research Goals Worksheet**

Interns: Use this worksheet to help you understand your research project. Answer each question in your own words. If you have questions or are unable to articulate a response, discuss with your mentor. Refer to this sheet when creating a presentation about your project – your audience will want to know the answers to these questions, too.

*What is the research question?*

*Why is it important to investigate this question? Who cares?*

*How does this research fit into a 'bigger picture'? In other words, how will the results be used? What will the impact be, and to whom?*

*What is your hypothesis for your research question?*

*What methods will you use in your research? Why?*

*What kinds of data will you collect?*

*How will you conduct your data analysis, and do you need anything in particular (e.g. software)?*

*When and how will you present your results, in order to share them with others?*

## Practice Talks and Final Presentation Topics

This page outlines 4 short practice talks and one final oral presentation to be spaced out over 5 weeks.

### # 1 What is the “Big Picture” of your research? 3 minutes, 2 slides only

**Talk Topic:** In simple terms, explain the relationship between your research and the real world. This should be a very general discussion about why your research is important – in other words, why should anybody care? You may discuss potential applications in technology, medicine, etc., contributions to scientific knowledge and understanding, and possible relationships to other fields. This discussion should identify who funds the research, and why.

**Instructions:**

- Create one slide which is your Title Page. It should include your project title, your name, your community college, your major, your lab mentor and faculty advisor, your faculty advisor's department, and the funding source for your project.
- Create one slide that outlines the main points that you want to cover in explaining The Big Picture. Do NOT go into specifics about your own research project – that is for next week.
- In addition to getting information from your mentor, you should try talk to others in your research group to get a greater range of ideas.

### #2 What are your Research Goals this summer? 3 minutes, 1 slide only

**Talk Topic:** In simple terms, explain the specific goals of your research project, i.e. what exactly will you try to accomplish this summer? Why are these goals important? How does this relate to the big picture that you already discussed? You may briefly describe what your approach will be, but do not go into detail.

**Instructions:**

- Create one slide which outlines the main points for describing your research objectives. Do not give details about your exact research methods; that will be the topic of your next talk.
- Think carefully about what you include in your slides. Do not put too much information on one page, because stuff will get lost in the clutter. On the other hand, there should be sufficient information for the slide to stand alone – it should not be necessary for you to verbally identify everything.

### #3 Research/Experimental Methods 3 minutes, 1 or 2 slides only

**Talk Topic:** Describe the method that you are using to achieve your research goals. This might be a laboratory process, collecting field data, surveying people or archives, or writing computer programs. If your work includes several methods/processes, pick one that is very important and that you understand well. Do NOT go into too much detail – what is most important is that your audience understands the *function* of what you are doing. Include a discussion of the challenges, sources of error or constraints that you encounter in your experimental work or collection of data.

**Instructions:**

- Create one or two slides that include at least one *schematic diagram* of your method, process, equipment, etc. Pay very careful attention into how you design your graphic. Everything must be clearly labeled and easy to understand. Do NOT present your experimental data yet – that is for next week.
- BEWARE when borrowing a diagram or schematic from someone else. This can be a huge time saver, but realize that you will be accountable for explaining everything that is in the diagram. Do not include anything in your graphic which you cannot explain yourself.

## #4 Experimental/Research Data 3 minutes, 2 - 3 slides max.

**Talk Topic:** Present data that you have collected from your research project. Data can be in many forms – graphs, charts, micrographs, photos, etc. If you have not collected your own data, then you may borrow some from your mentor for presentation.

### **Instructions:**

- Create one - three slides which present data from your research.
- Put very careful attention into how you design your data presentation. Everything must be clearly labeled and easy to understand. Your data should stand alone – it should be possible to understand what the data is about without your verbal explanation. Graphs and tables should have titles and legends which identify the nature of the data, all axes should be clearly labeled, including units. Images should have titles and dimensional scales.
- Be sure that you understand the data that you are presenting – if you put it on your slide, be prepared to answer questions about it.

## #5 Final Presentation of Progress to Date 8 - 10 minutes, 10 -12 slides max.

Present on all of your research accomplishments to date. This talk will combine/include all of the components that have previously addressed:

1. Title Page
2. Discussion of the Big Picture
3. Your specific research goals
4. Your experimental/research methods
5. Your progress to date – accomplishments, data acquired, etc
6. Summary analysis of what you have achieved so far –i.e. what have you learned?
7. Future plans – what still remains to be done?
8. Acknowledgements, personal comments and observations

Reminders on things to consider when designing your slides:

- Fonts should be 18 points or larger. Labels can be as small as 14 points. San-serif fonts (arial, verdana) are generally easier to read. Serif fonts (times, courier) can appear cluttered.
- Consider balance of too much/too little information per slide. Slide needs to stand alone, but should not be cluttered. A suggested gauge: one slide should be worth 30 seconds to 2 minutes worth of talking.
- Images, diagrams and graphics should be easy to see/read and should be clearly labeled. They should stand alone.
- Be prepared to answer questions about anything that you include in your slides. If you don't understand something, don't include it in your presentation.

**Traveling Technologies Research Project  
Internship Program Entry Survey**

Name: \_\_\_\_\_

*Please answer the following questions. We appreciate your care and thought as it will help us to assess the impact of this internship. Your answers will be kept confidential and used for evaluation and program improvement purposes.*

1. In your own words, briefly summarize the goals of your research project.
2. What are the two most significant issues that interest you in the area of the societal impacts of nanotechnology?
3. Please identify at least two academic/research or personal development skills that you hope to gain from this internship.
4. What do you anticipate being the most challenging aspect of the internship?
5. What do you anticipate being the most enjoyable aspect of the internship?
6. What are your personal goals for your internship?

**Traveling Technologies Research Project  
Internship Program Exit Survey**

Name: \_\_\_\_\_

*Please answer the questions on the following two pages. We appreciate your care and thought as it will help us to assess the impact of this internship program. Your answers will be kept confidential and used for evaluation and program improvement purposes.*

6. In your own words, briefly summarize what you accomplished in your research project.
  
  
  
  
  
  
  
  
  
  
7. What are the two most significant things you learned or discovered about the societal impacts of nanotechnology?
  
  
  
  
  
  
  
  
  
  
8. Please describe the two most important academic/research or personal development skills that you gained or improved during this internship.
  
  
  
  
  
  
  
  
  
  
9. What was the most challenging aspect of the internship?
  
  
  
  
  
  
  
  
  
  
10. What was the most enjoyable aspect of the internship?

## Intern Personal Impacts Survey

Please place a check mark in the box which indicates how much you agree or disagree with the following statements:

	<b>Strongly Disagree</b>	<b>Disagree Somewhat</b>	<b>Neither Agree Nor Disagree</b>	<b>Agree Somewhat</b>	<b>Strongly Agree</b>
I liked my research project.					
I feel that I fully understood my research project.					
I am satisfied with the progress I achieved.					
I am happy with how much I learned.					
I feel positive about my interactions with my mentor.					
I feel that I had enough access to my mentor.					
My mentor provided me with adequate guidance and training.					
I feel positive about my interactions with faculty.					

Comments on any of the above:

<b>As a result of participating in this summer research experiences....</b>	<b>Strongly Disagree</b>	<b>Disagree Somewhat</b>	<b>Neither Agree Nor Disagree</b>	<b>Agree Somewhat</b>	<b>Strongly Agree</b>
I am more confident in my own science/social science knowledge.					
I am more confident in my research skills.					
I have more confidence in my communication & presentation skills					
I will be more motivated in my courses					
I am more interested in a career in the social sciences.					
I have more confidence in my ability to pursue a career in the social sciences.					
I plan to pursue future opportunities to do research.					

Comments on any of the above: