



Welcome to



Admission Packet

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I. Application Form

Information about you

First Name
Date of birth
Address
City State
Home telephone number
E-mail

How did you learn about MSOP?

- Friend
- Website
- Teacher/School
- Other, please explain:

At present, I am:

new

Information about your School

School Grade
At present, I am: freshman
Advising teacher
E-mail address
School Name
School Address
City State
School Phone School Fax

What kind of previous experience in a laboratory have you had?

- Science class lab, which class:
- Research project, where:
- None
- Other, please explain:

Past lab classes, describe:

Techniques and materials familiar with:

Emergency Contact

Name
Relationship
Address
City State Zip Code
Home telephone number Cell Phone

Interests

List some of your interests in school and outside.

To be filled in interview with Coordinator and Research Mentor

Weekly schedule

Please fill in class periods and extra-curricular activities to determine time available for research. Please note that you will be held accountable to show up at these times.

Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8:00						
9:00						
10:00						
11:00						
12:00						
13:00						
14:00						
15:00						
16:00						
17:00						
18:00						
19:00						

**II. Goals and Responsibilities
of Participation**

Stacey Y. Pharrams, Outreach
Coordinator

**This document is a contractual
declaration of unification and
purpose.**

By signing this document you indicate
that you have a clear understanding of
the principles therein.

Student

The fundamental purpose of this
program:

- to promote familiarity with the
sciences
- to encourage scientific interest in
students that would not ordinarily be
exposed,
- to institute collaborative skills and
positive interpersonal relations,
- to demonstrate and explore potential
career opportunities,
- to enhance logical and critical
thinking skills.

Parent

The practical purpose of this program is
to provide resources for science fair
project completion with the assistance of
a mentor/advisor.

Together we will work diligently to
complete an independent science fair
project.

Together we will respect each other's
personal space and property.

Together we will acquire as much
knowledge as possible.

Together we will make wise and efficient
use of our time and resources.

Together we will explore options and
pursue opportunities.

Together we will be challenged.

III. Format of MSOP and Regulation

Program Structure

1. Interview with the Coordinator and Research Mentor
2. Brainstorm for ideas for a project. Do research in the library and on the internet on your topic.
3. Determine which science fairs you want to go to and what are their deadlines,
4. Determine the **problem**, which is a question that must be answered by your project.
5. Develop a hypothesis or an educated guess that answers your question.
6. Determine the purpose of your project.
7. Gather all your materials.
8. Write your procedures and plan your experiment:
 - a. draw flowchart
 - b. Fill in Monthly Planner
9. Start your experiment.
10. Collect your data.
11. Analyze data in the form of tables and graphs.
12. Draw conclusions about your project. Conclusions are overall summaries of what happened, including if your hypothesis was supported or non-supported.
13. Prepare your presentation
 - a. Trial presentation to other MSOP students.
14. Apply to Science Fair
 - a. It is the student's responsibility to

apply to the desired science fair(s),

- b. Go to www.cmu.edu/msop/Competitions and see what you need to do.

15. It's show time, good luck!

Regulations – Safety and Etiquette

It is a privilege for you and for us to be at MSOP doing research, it is expected of you to behave properly when in the Mellon Institute building. Behaving properly means: not making noise or running across the corridors, not wandering around the building, etc.

Attendance is mandatory as per the "Contract of Attendance". You will be excused in situations of dangerous weather and family emergencies. In these cases, your parents or guardians should call Stacey Pharrams so we know that you are safe.

IV. Going to a Science Fair

Which Science Fairs should I go to?

You can check out on-line which competitions are available to you at www.cmu.edu/Competitions.

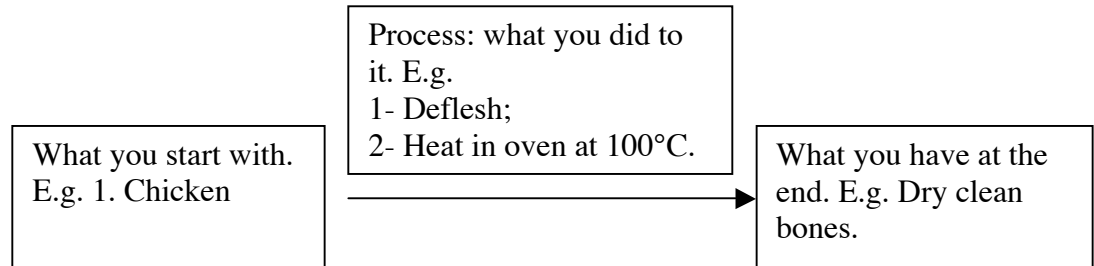
Always dress to impress during a science fair. Don't show up in jeans and Tshirt!...

Science Competition(s)	Date being held
_____	_____
_____	_____
_____	_____

You, the student, must apply yourself to the competitions you want to attend. List the requirements for each competition (application, recommendation letter(s)...)

V. Making a Flow-chart – Outline your experiment

Outline every step of your experiment with Stacey and your Mentor. Then diagram each step and incorporate the WHY of each step.



Be patient. You will make mistakes, but don't be afraid to try again.

VI. Monthly Schedule – Planning your Experiment

Make a schedule of when you are going to work on your science fair project and what you are going to do each time!

Sunday						
Monday						
Tuesday						
Wednesday						
Thursday						
Friday						
Saturday						

You can print out more sheets from www.cmu.edu/MSOP/studentresources.

VII. Writing your Report – Tips and Suggestions

A scientific report consists of the following parts:

1. **Abstract:** This is a summary of your project. You should state the crime and the murderer in a single sentence. Tell your audience what problem or question you were trying to solve and what was the answer you found. It is also common to refer the main techniques or the rationale of your method.
2. **Introduction:** In this section you need to get your audience up to date. They may have never heard of the particular branch of science that you have just devoted several months studying. Therefore you must give them background information to explain why you studied your question/problem.
 - a. Background information: localize your problem.
 - b. State the question/problem you are addressing.
 - c. State your hypothesis – your expected solution of the problem/question.
 - d. Explain the principles behind the main methods you used.
3. **Methods:** Go through the several steps of your experiment, explain why each step was necessary, refer to your flow chart!
4. **Results:** At this point you will present the hard evidence that you found. The most important thing to remember is CLARITY. A bunch of numbers means nothing and proves nothing.
 - a. Use tables and graphics when possible to organize your data.
 - b. Highlight averages found and/or trends detected.
5. **Conclusion:** analyze the meaning of your results. Was your hypothesis supported? What could scientists study next now that you have discovered this? What would you like to study next to learn more about your problem/solution?

IX. Surveys – Student Survey (Fill out at the end of your project)

	No	More or less			Yes
	1	2	3	4	5
1. Do you enjoy working on your project?	1	2	3	4	5
2. Do you think your project is too hard?	1	2	3	4	5
3. Are you comfortable in asking questions?	1	2	3	4	5
4. Do you feel that you know what is expected of you?	1	2	3	4	5
5. Do you feel many times that you don't know what to do next?	1	2	3	4	5
6. Do you think that having the experiments planned in a more specific way would make it easier to get things done?	1	2	3	4	5
5. Do you think this project is important for your future?	1	2	3	4	5
7. Do you think that you have been learning much on how to do					
a. lab techniques	1	2	3	4	5
b. library research	1	2	3	4	5
c. internet research	1	2	3	4	5
d. how to plan experiments	1	2	3	4	5
e. organizing a lab report	1	2	3	4	5
f. writing a lab report	1	2	3	4	5
g. preparing a presentation	1	2	3	4	5
8. Which of the things on the list do you feel you have more problems with: (circle as many as you want)					
a. lab techniques					
b. library research					
c. how to plan experiments					
d. organizing a lab report					
e. writing a lab report					
f. preparing a presentation					
9. Why are you doing this project?					
It is a requirement for school/My teacher wanted me to.	<input type="checkbox"/>				
I want to compete in a science fair.	<input type="checkbox"/>				
My parents think it will be good for me.	<input type="checkbox"/>				
I want to do research as a career.	<input type="checkbox"/>				

– Other reason, please explain:

10. How do you feel about the choice of topic?

– I chose it because I found it interesting

– My teacher picked it for me

– I picked it without knowing much about it

– Other reason, please explain:

11. Is there something else you would have rather done in picking your topic?
(Done more research, been given alternatives, needed more time)

12. How do you usually come to the lab?

– by car, with a parent

– by bus, with a parent

– by bus

– I walk

– Other way, please explain:

13. What usually gets in the way of coming to the lab?

– Extra-curricular activities

– Wanting to go out with friends

– Parent can't always bring me to the
lab

– Something else? Please explain:

14. Is there anything in specific that has been giving you trouble? (In the lab, coming to the lab, my experiment needs too much time, etc...)

14. What are some of the things you find really great about doing research at the Mellon Institute?

Parent Survey

Name of Parent

Name of Student

School

1. How does your son/daughter come to lab?

- by car, with a parent
- by bus, with a parent
- by bus
- Walks

2. What usually gets in the way of coming to the lab?

- Extra-curricular activities Started before or after joining the lab?
- Being with friends
- Parent can't always bring student to the lab
- Something else? Please explain:

3. Are you aware of the schedule that your son/daughter should keep and of how much time he/she should spend in the lab to get his/her project done? Yes No

4. Do you think it would be helpful if you, the parent, was more aware of this? Yes No

5. How do you think your child can best be served by our program or what skills and techniques do you think your child is weakest at?

6. What are your child's strengths that he/she brings to the program?