

**WESTERN CONNECTICUT STATE UNIVERSITY**  
**Human Subjects Research Review Form**

Principal Investigator: Frank LaBanca  
Department Doctoral Student – Instructional Leadership  
Address signed form should be sent to: 33 Paugussett Road, Sandy Hook, CT 06482  
E-mail franklabanca@sbcglobal.net Phone number: 203-947-2850

Title of Project: IMPACT OF PROBLEM FINDING ON THE QUALITY OF AUTHENTIC OPEN-  
INQUIRY SCIENCE RESEARCH PROJECTS

New research project  Continuation  Modification  Teaching

Exempt Review (attach a completed copy of the "Application for Exemption")

Expedited/Full Review

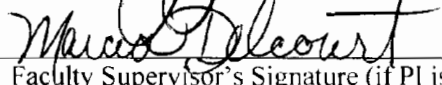
To complete this form, please follow the instructions in sections A and B.

The **department chair** and the **principal investigator must** sign this form. If the P.I. is a student, his/her faculty supervisor must also sign.

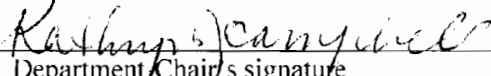
**Assurance of continued compliance with regulations regarding the use of human subjects.** I certify that the information provided for this project is accurate. If procedures for obtaining consent of subjects change, or if the risk of physical, psychological, or social injury increases, or if there should arise unanticipated problems involving risk to subjects or others, I shall promptly report such changes to the Institutional Review Board. I shall report promptly unanticipated injury of a subject to my department chair and to the Institutional Review Board.

  
\_\_\_\_\_  
Principal Investigator's Signature

9 Jan 07  
Date

  
\_\_\_\_\_  
Faculty Supervisor's Signature (if PI is a student)

Jan. 9, 2007  
Date

  
\_\_\_\_\_  
Department Chair's signature

1-9-07  
Date

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**Committee Action:**

Approved through exempt review

Approved by full committee review

Approved through expedited review

Not approved; clarification or  
modification required

\_\_\_\_\_  
IRB Chair's Signature

\_\_\_\_\_  
Date

## **A. Instructions for completing the HUM-1 Form (attach answers):**

1. Describe the characteristics of the subject population (anticipated number, age ranges, gender, ethnic background, and health status).

Students participating in the study will be those who have completed a research project and presented their results at either the Connecticut Science Fair or the International Science and Engineering Fair. Students are evaluated by a panel of professionals using a scoring rubric, developed for the event. These scores will be provided to select a range of quality in projects.

Selection will include projects that have been judged to examine a wide variety of types and quality. A sample between 12 and 20 students will be purposefully selected from the 2007 Connecticut Science Fair held March 13-17 at Quinnipiac University in Hamden, Connecticut. These students will be in grades 11-12, approximately 16-18 years of age, and attend a Connecticut High School.

A sample between 10 to 14 students will be purposefully selected from the 2007 Intel International Science and Engineering Fair to be held May 13-19 in Albuquerque, New Mexico. These students will be in grades 11-12 or international equivalent. Priority for recruitment of subjects will be from different categories. Students will be oversampled to insure a large enough sample for study.

2. Explain the rationale for use of special classes of subjects (children, mentally disabled, elderly, prisoners, or others).

Problem finding has been primarily studied in the arts. Getzels and Csikszentmihalyi (1976) conducted one of the initial problem finding studies: longitudinal research of artists. Few studies of problem finding in science students exist (Hoover, 1994; Hoover & Feldhusen, 1994; Roth & Bowen, 1993; Roth & Roychoudhury, 1993; Shepardon, 1997; Subotnik, 1988). These studies have been conducted by limited researchers, and most are over 10 years old. Even a leading psychology of learning text only dedicates 1 page to problem finding, while expounding on problem solving for over 22 pages (Driscoll, 2005, p. 472). Problem finding exists more often as a theoretical construct, rather than an empirically studied concept and is infrequently associated with science.

Problem finding and open inquiry have, on a limited basis, been examined in the classroom setting. Ironically, there appears to be almost nonexistent published research of open inquiry, in terms of science fairs, and problem finding. Reports of students at science fairs are primarily descriptive in nature, (e.g. Bellipanni, 1994; Colwell, 2003). Therefore, the population of students proposed in this study, those of the Connecticut Science Fair and the International Science and Engineering Fair, are an untapped resource of valuable information regarding problem finding abilities, strategies, and dispositions. Indeed, these student-scientists are the innovators, novel thinkers, and model learners that can provide meaningful insight for educators looking to promote creative endeavors for students in their science instruction.

The results of this research may provide information to better understand problem finding in authentic open-inquiry science environments by identifying student best practices. This study may also provide guidance for instructional strategies to promote creativity, in terms of problem finding, which may improve educational programming in the science classroom.

### References

- Bellipanni, L. J. (1994). The science fair experience: profile of science fair winners. (ERIC Document Reproduction Service No. ED395793).
- Colwell, B. (2003). Science fairs. *Computer*, 36, 4, 13-16.

- Czarnik, J.C. & Hickey, D.T. (1997). Problem generation in the Mission to Mars curriculum. [Paper] American Educational Research Association Annual Meeting, Symposium session, 16.41. Cambridge: BBN Labs, Inc.
- Driscoll, M.P. (2005). Psychology of learning for instruction. Boston: Allyn and Bacon.
- Getzels, J. & Csikszentmihalyi, M. (1976). The creative vision: A longitudinal study of problem finding in art. New York: Wiley & Sons.
- Hoover, S.M. (1994). Scientific problem finding in gifted fifth-grade students. *Roeper Review*, 16, 3, 156-159.
- Hoover, S. M. & Feldhusen, J.F. (1994). Scientific problem solving and problem finding: a theoretical model. In M.A. Runco (ed.) *Problem finding, problem solving, and creativity*. Norwood, NJ: Ablex Publishing Company.
- Roth, W-M & Bowen, G. M. (1993). An investigation of problem framing and solving in grade 8 open-inquiry science program. *The Journal of the Learning Sciences*, 3, 165-204.
- Roth, W-M. & Roychoudhury, A. (1993). The development of science process skills in authentic contexts. *Journal of Research in Science Teaching*, 30, 127-152.
- Shepardson, D.P. (1997). The nature of student thinking in life science laboratories. *School Science and Mathematics*, 97, 37-44.
- Subotnik, R.F. (1988). Factors from the structure of intellect model associated with gifted adolescents' problem finding in science: research with Westinghouse Science Talent Search winners. *Journal of Creative Behavior*, 22, 1, 42-54.

3. Identify the records or data to be obtained for individually identifiable living human subjects.

A demographic survey, data from the USRT, and semi-structured interviews will be conducted with each student participant. Adult subjects will participate in a semi-structured interview. See appendix.

4. Describe plans for recruitment of subjects and the consent procedures to be followed, or explain why consent is not needed.

*Purposeful selection of student-subjects.* Judging at the CSF and ISEF is conducted using standards by science professionals in industry, academia, and service organizations. These professionals judge each project using an analytical scoring system and then caucus to determine a rank order and/or quartile level rank for the projects. CSF and ISEF will provide a rank order of potential subjects so a variety of projects can be identified. The purpose of using the CSF and ISEF ranks will be to allow a group of professionals, independent of this research, to identify and determine the quality of the projects.

*Student-subject procedures.* Both CSF and ISEF will inform all participating students of this study via email. Initial face-to-face contact with potential subjects will be made at the CSF or ISEF. Students will receive an invitation to participate in the study, informed consent, and other pertinent information. Follow-up phone calls will be made to all potential subjects. Once consent is received, student-subjects will be asked to complete the demographic survey and the USRT, either on paper or online. Finally subjects will be interviewed either by phone or in person at their respective schools.

*Parent-mentor procedures.* Students will provide parent and mentor contact information in their demographic survey. A group of parents and mentors will be purposefully selected, as a subset of the student-subjects, and informed consent will be provided. Once consent is received, adult subjects will be interviewed by phone.

5. Describe safeguards to assure anonymity and voluntary participation of subjects. In the case of student subjects, indicate that failure to participate in or withdrawal from the project will not affect class grade.

Information provided by subjects will remain confidential. Participation in the study is voluntary. Subjects will be informed that failure to participate in the project will not affect their science fair participation. No students of the PI will be used in the study.

6. "Subject at risk" means any individual who may be exposed to the possibility of injury, including physical, psychological, or social injury, as a consequence of participation as a subject in any research, development, or related activity that departs from the application of those established and accepted methods. [45CFR 46.3(b)]

The study will not provide an environment of physical, psychological or social injury. Results received will remain confidential. No data will be collected to identify an individual. All data will be analyzed in aggregate form.

**B. Answer the following (if you answer yes to either question, the protocol requires full review):**

- Does your project involve **risk of physical injury** to subjects?  
 Yes  No

(If yes, describe the nature of the risk, the justification for undertaking the risk, and the procedures used to obtain the subject's informed consent to take the risk.)

- Does your project involve **risk of psychological or social injury** to human subjects?  
 Yes  No

(If yes, describe the nature of the risk, the justification for undertaking the risk, and the procedures used to obtain the subject's informed consent to take the risk.)

**NOTE: If participation in the research involves physical, psychological, and/or social risk to the subject, the informed consent form must say so in bold type.**

=====  
**Checklist for attachments:**

- Completed Application for Exemption (if claiming exemption)
- Answers to A 1 through A 6
- Survey or questionnaire
- Informed consent form
- Student's current NIH training certificate
- Instructor's current NIH training certificate (if not already on file in the Grants Office)
- Chair's current NIH training certificate (if not already on file in the Grants Office)

Note: "Current" means the training has been completed within the past 12 months.

**Please send the completed form (if the protocol requires full review, send 9 copies) to:  
Director of Grant Programs, 322 University Hall. If you have questions, call 7-8281.**

## Appendix A



Greetings Connecticut Science Fair Student-Scientist and parent/guardian,

About 18 years ago I was a high school student and presented my science fair project. I congratulate you on your accomplishment of making it to the 2007 Connecticut Science Fair and wish you good luck. It takes a real star to persevere and produce a high quality project.

I am writing to invite you to take part in a study that I am conducting as part of my dissertation research at Western Connecticut State University. I am a doctoral student there, and also a science teacher at Newtown High School. I am conducting research to examine how students get their ideas for their science fair projects. The study will consist of an interview with you, and possibly your parent, guardian, and/or mentor. I will also ask that you complete two short surveys that help me understand you better.

Interviews will take approximately 1 hour, and will take place either at your school or over the telephone, whichever is more convenient. Surveys can be completed either on paper or online. You may refuse to answer any question, and you are free to withdraw from this study at any time. If you do not wish to participate, it will not have any effect on your science fair participation or evaluation.

To protect your privacy, your name will not appear in this study and will be held in the strictest of confidence. No one besides my research team will have access to your replies. When the results of this research are published, it will be impossible to identify you or any other student.

If you are willing to participate, please sign the student portion of the consent form on the back of this sheet, and ask a parent or guardian to sign their portion. Please return the signed consent forms directly to me in the envelope provided. An identical copy of this letter has been included and is yours to keep. If you or your parent/guardian have any further questions about the study, please contact me at the email address or phone number below.

I look forward to hearing from you!

Sincerely,

Frank LaBanca  
*www.labanca.net*  
(203) 947-2850

**WESTERN CONNECTICUT STATE UNIVERSITY**  
**in cooperation with THE CONNECTICUT SCIENCE FAIR ASSOCIATION**

“Impact of problem finding on the quality of authentic open-inquiry science research projects”  
Frank LaBanca, Principal Investigator  
(203) 947-2850, [www.labanca.net](http://www.labanca.net)

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**Student Consent**

I have read the description of the research project and agree to participate. I am aware that the results will be used for research purposes only, that my identity will remain confidential, and that I can withdraw at any time.

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

Phone number: \_\_\_\_\_ email address: \_\_\_\_\_

**Parent/Guardian Consent**

I have read the description of the research project and agree to let my child participate. I am aware that the results will be used for research purposes only, that my child's identity will remain confidential, and that he/she can withdraw at any time.

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

Relation to student: \_\_\_\_\_ Phone number: \_\_\_\_\_ /

email address: \_\_\_\_\_



Greetings International Science Fair Student-Scientist and parent/guardian,

About 18 years ago I was a high school student and presented my science fair project. I congratulate you on your accomplishment for becoming a finalist at the 2007 International Science and Engineering Fair and wish you good luck. It takes a real star to persevere and produce a high quality project.

I am writing to invite you to take part in a study that I am conducting as part of my dissertation research at Western Connecticut State University. I am a doctoral student there, and also a science teacher at Newtown High School in Connecticut. I am conducting research to examine how students get their ideas for their science fair projects. The study will consist of an interview with you, and possibly your parent, guardian, and/or mentor. I will also ask that you complete two short surveys that help me understand you better.

Interviews will take approximately 1 hour, and will take place over the telephone. Surveys can be completed either on paper or online. You may refuse to answer any question, and you are free to withdraw from this study at any time. If you do not wish to participate, it will not have any effect on your science fair participation or evaluation.

To protect your privacy, your name will not appear in this study and will be held in the strictest of confidence. No one besides my research team will have access to your replies. When the results of this research are published, it will be impossible to identify you or any other student.

If you are willing to participate, please sign the student portion of the consent form on the back of this sheet, and ask a parent or guardian to sign their portion. Please return the signed consent forms directly to me in the envelope provided. An identical copy of this letter has been included and is yours to keep. If you or your parent/guardian have any further questions about the study, please contact me at the email address or phone number below.

I look forward to hearing from you!

Sincerely,

Frank LaBanca  
*www.labanca.net*  
(203) 947-2850

**WESTERN CONNECTICUT STATE UNIVERSITY**  
**in cooperation with SCIENCE SERVICE AND THE INTERNATIONAL SCIENCE AND ENGINEERING FAIR**

“Impact of problem finding on the quality of authentic open-inquiry science research projects”

Frank LaBanca, Principal Investigator

(203) 947-2850, [www.labanca.net](http://www.labanca.net)

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**Student Consent**

I have read the description of the research project and agree to participate. I am aware that the results will be used for research purposes only, that my identity will remain confidential, and that I can withdraw at any time.

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

Phone number: \_\_\_\_\_ email address: \_\_\_\_\_

ISEF Project Number: \_\_\_\_\_

**Parent/Guardian Consent**

I have read the description of the research project and agree to let my child participate. I am aware that the results will be used for research purposes only, that my child's identity will remain confidential, and that he/she can withdraw at any time.

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

Relation to student: \_\_\_\_\_ Phone number: \_\_\_\_\_

email address: \_\_\_\_\_



Parents and mentors of science fair students:

I am a doctoral student at Western Connecticut State University and a science teacher at Newtown High School in Connecticut, currently conducting research examining how students get and develop their ideas for their science fair projects. I am excited to have the opportunity to work with your [RELATION], [NAME], who will be a subject in my study.

In order to have good trustworthiness and dependability in my study, I am looking to triangulate my data by interviewing those adults who have had an impact on [NAME]'s study. I am hoping to have the opportunity to conduct an interview with you to improve the quality of my findings.

Interviews will take approximately 30 minutes, and will take place over the telephone. You may refuse to answer any question, and you are free to withdraw from this study at any time.

To protect your privacy, your name will not appear in this study and will be held in the strictest of confidence. No one besides my research team will have access to your replies. When the results of this research are published, it will be impossible to identify you or any other individual.

If you are willing to participate, please sign the consent form on the back of this sheet, and ask a parent or guardian to sign their portion. Please return the signed consent forms directly to me in the envelope provided. An identical copy of this letter has been included and is yours to keep. If you have any further questions about the study, please contact me at the email address or phone number below.

I look forward to hearing from you!

Sincerely,

Frank LaBanca  
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**WESTERN CONNECTICUT STATE UNIVERSITY**  
**in cooperation with THE CONNECTICUT SCIENCE FAIR ASSOCIATION AND**  
**SCIENCE SERVICE'S INTERNATIONAL SCIENCE AND ENGINEERING FAIR**

“Impact of problem finding on the quality of authentic open-inquiry science research projects”

Frank LaBanca, Principal Investigator

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**Consent**

I have read the description of the research project and agree to participate. I am aware that the results will be used for research purposes only, that my identity will remain confidential, and that I can withdraw at any time.

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

Phone number: \_\_\_\_\_ email address: \_\_\_\_\_

Role:  Parent  Guardian  Mentor to: \_\_\_\_\_

*Student Interview Schedule, version 2.2*

THE PROCESS

- Describe the process you went through to get your idea for your research project. How did you go from a general idea, to a focused problem/project?
- (FOCUS) What got you thinking about the subject of your project? What is observing natural phenomenon, reading journal articles, or something that has always interested you?
- What were some of the rewards? Obstacles?
- How long did it take you to come up with the idea for your project?
- Does your project tie in with your hobbies and extracurricular activities, or is it purely a school activity to you?
- What are some of the frustrations with coming up with your idea?
- What kind of advice would you give to another student who wanted to conduct research?
- What makes your project a good project?
- Did you create your project with wanting to help local or global issues?
- Name three adjectives that describe you as a person in terms of your science project.
- (ALT) If you have conducted projects in the past, which one did better at the science fair? Why do you think this?
- Who influenced you in determining the idea for your project? What was the contribution?
- (FOCUS) If your project was inspired by professional research, did you contact and follow up on communicating with an expert in that field? Tell me about the experience.
- Many students conduct research, yet your project was selected [to attend CSF][as a finalist project at CSF][to attend ISEF][as an award winner at ISEF]. What makes you more successful than all of the other students?

CREATIVITY

- What is creativity?
- Are science and creativity related?
- How are you creative?
- When are you creative?

THE SCIENTIST

- How are scientists different/similar from artists/musicians? Journalists? Politicians? Wait staff? Salespeople?
- How are you different/similar to students who don't conduct research, but may be of similar intellect?
- How are you different/similar to students who do research but have less experience than you do?
- Tell me about your mentor. What are some of the personal qualities that you respect or admire in your mentor?

*Parent/Mentor Interview Schedule, version 1.0*

THE STUDENT

- Can you tell me about [STUDENT'S NAME]? Tell me about some of [HIS/HER] academic, social, and personal qualities.
- List three adjectives that describe [STUDENT'S NAME] in terms of [HIS/HER] science fair project.
- How did [STUDENT'S NAME] come up with the idea for [HIS/HER] project?
- What role did you play in [STUDENT'S NAME]'s project?
- What do you think were some of the frustrations and milestones that [STUDENT] encountered while doing [HIS/HER] research project?
- How do you balance your expertise with allowing the student to be independent? How do you think you did in this role? What would you change if you mentored another student in the future?
- What made [STUDENT'S NAME]'s project a good project?

CREATIVITY

This study focuses on student's creativity while examining its relation to the logical/analytical processes in science. I would like to get some of your impressions about science and creativity

- What is creativity?
- Are science and creativity related?
- How are you creative?
- When are you creative?
- How are scientists different/similar from artists/musicians? Journalists? Politicians? Wait staff? Salespeople?

DEMOGRAPHIC SURVEY




Name  
Address  
City/State/Zip  
Phone number  
Alt. phone number  
email  
Age  
Grade

School Name  
School Address  
School City/State/Zip  
School phone number

Principal  
Guidance counselor  
Current H.S. courses



Parent(s)/Guardian(s) name(s):  
Parent/Guardian phone number  
Parent/Guardian email  
Did your parent(s)/guardian(s) help with your project?  
How?

Teacher who helped with your project most  
Teacher's phone #  
Teacher's email  
What subject does this educator teach?  
Area of expertise  
How did this teacher help you?


--

Mentor's name  
Mentor's affiliation  
Area of expertise  
Mentor phone number  
Mentor email

How did your mentor help you?:



## DEMOGRAPHIC SURVEY

Please fill in the information below. You may want to print this page first, if you do not have all of the information immediately available. If some information is unknown or not applicable, please leave it blank. We will contact you if I need additional information or clarification.

Thank you for participating in this research! Remember, this information is confidential and will only be used by the research team and you are free to withdraw from this study at any time. Please feel free to email questions to me at [franklabanca@sbcglobal.net](mailto:franklabanca@sbcglobal.net)

Name:\*

Address:

City/State/Zip:

Phone number:

Alternate phone number:

email:\*

Age:

Grade:

School Name:

School Address:

School City/State/Zip:

School phone number:

Principal:

Guidance counselor:

Current High School courses:

Please provide a list of courses that your are currently enrolled. Be sure to indicate the level (e.g. AP, Honors, College Prep, etc).

Teacher who helped with your project most:

Teacher's phone number:

Teacher's email:

What subject does this educator teach?:

Area of expertise:

Please write a short sentence.

How did this teacher help you?:

Parent(s)/Guardian(s) name(s):

Parent/Guardian phone number:

Parent/Guardian email:

Did your parent(s)/guardian(s) help with your project?:

Yes  No

Please write a short sentence.

How?:

Mentor's name:

Mentor's affiliation:

Where does this person work?

Area of expertise:

Mentor phone number:

Mentor email:

Please write 1 or 2 sentences.

How did your mentor help you?:

Is there any additional information or clarification to the above information that you would like to provide?

Notes:

Submit

Clear Form

# The USRT Scale ver. A

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

A:	B:	C:
----	----	----

original by: William. C. Kosinar  
© 1955

updated by: Frank LaBanca  
© 2006

Directions: Below is a list of terms frequently used to describe people. Select the letter of the term of each pair that best describes you and bubble on the bubble sheet. Even if neither term describes you exactly, select the one term of each pair that is nearest to being a description of yourself. Because these terms are personal to each individual, there are no "right" or "wrong" answers.

- |                                     |                                    |  |
|-------------------------------------|------------------------------------|--|
| 1. A Reliable<br>B Imaginative      | 15. A Formal<br>B Easy going       | 29. A Self-confident<br>B Tactful        |
| 2. A Constructive<br>B Original     | 16. A Curious<br>B Friendly        | 30. A Impulsive<br>B Cynical             |
| 3. A Self-controlled<br>B Practical | 17. A Contented<br>B Imaginative   | 31. A Knowledge-seeking<br>B Egotistical |
| 4. A Impulsive<br>B Inhibited       | 18. A Reserved<br>B Self-confident | 32. A Habit-bound<br>B Conventional      |
| 5. A Independent<br>B Thoughtful    | 19. A Assertive<br>B Patient       | 33. A Meticulous<br>B Creative           |
| 6. A Leading<br>B Persevering       | 20. A Inhibited<br>B Eccentric     | 34. A Worrying<br>B Impulsive            |
| 7. A Easy going<br>B Self-confident | 21. A Patient<br>B Imaginative     | 35. A Eclectic<br>B Sensitive            |
| 8. A Conventional<br>B Egotistical  | 22. A Practical<br>B Original      | 36. A Constructive<br>B Enthusiastic     |
| 9. A Formal<br>B Eccentric          | 23. A Inhibited<br>B Cynical       | 37. A Practical<br>B Reliable            |
| 10. A Poised<br>B Creative          | 24. A Independent<br>B Tactful     | 38. A Inflexible<br>B Conventional       |
| 11. A Self-confident<br>B Friendly  | 25. A Impulsive<br>B Poised        | 39. A Leading<br>B Reliable              |
| 12. A Reliable<br>B Curious         | 26. A Egotistical<br>B Inhibited   | 40. A Thoughtful<br>B Curious            |
| 13. A Assertive<br>B Cautious       | 27. A Emotional<br>B Contented     | 41. A Meticulous<br>B Self-confident     |
| 14. A Tactful<br>B Practical        | 28. A Constructive<br>B Creative   | 42. A Original<br>B Enthusiastic         |



## USRT SCALE

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Name:\*

E-Mail:\*

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Directions: Below is a list of terms frequently used to describe people. Click on the one term of each pair that best describes you. Even if neither term describes you exactly, select the one term of each pair that is nearest to being a description of yourself. Because these terms are personal to each individual, there are no "right" or "wrong" answers.

Remember, participation in this study is voluntary and you are free to withdraw at any time. Thank you for participating in this research!

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- |   |  |   |
|---|--|---|
| 1. <input type="radio"/> Reliable<br><input type="radio"/> Imaginative      | 2. <input type="radio"/> Constructive<br><input type="radio"/> Original    | 3. <input type="radio"/> Self-controlled<br><input type="radio"/> Practical |
| 4. <input type="radio"/> Impulsive<br><input type="radio"/> Inhibited       | 5. <input type="radio"/> Independent<br><input type="radio"/> Thoughtful   | 6. <input type="radio"/> Leading<br><input type="radio"/> Persevering       |
| 7. <input type="radio"/> Easy going<br><input type="radio"/> Self-confident | 8. <input type="radio"/> Conventional<br><input type="radio"/> Egotistical | 9. <input type="radio"/> Formal<br><input type="radio"/> Eccentric          |
| 10. <input type="radio"/> Poised<br><input type="radio"/> Creative          | 11. <input type="radio"/> Self-confident<br><input type="radio"/> Friendly | 12. <input type="radio"/> Reliable<br><input type="radio"/> Curious         |
| 13. <input type="radio"/> Assertive<br><input type="radio"/> Cautious       | 14. <input type="radio"/> Tactful<br><input type="radio"/> Practical       | 15. <input type="radio"/> Formal<br><input type="radio"/> Easy-going        |
| 16. <input type="radio"/> Curious<br><input type="radio"/> Friendly         | 17. <input type="radio"/> Contented<br><input type="radio"/> Imaginative   | 18. <input type="radio"/> Reserved<br><input type="radio"/> Self-confident  |
| 19. <input type="radio"/> Assertive<br><input type="radio"/> Patient        | 20. <input type="radio"/> Inhibited<br><input type="radio"/> Eccentric     | 21. <input type="radio"/> Patient<br><input type="radio"/> Imaginative      |

22.  Practical  
 Original
23.  Inhibited  
 Cynical
24.  Independent  
 Tactful
25.  Impulsive  
 Poised
26.  Egotistical  
 Inhibited
27.  Emotional  
 Contented
28.  Constructive  
 Creative
29.  Self-confident  
 Tactful
30.  Impulsive  
 Cynical
31.  Knowledge-seeking  
 Egotistical
32.  Habit-bound  
 Conventional
33.  Meticulous  
 Creative
34.  Worrying  
 Impulsive
35.  Eclectic  
 Sensitive
36.  Constructive  
 Enthusiastic
37.  Practical  
 Reliable
38.  Inflexible  
 Conventional
39.  Leading  
 Reliable
40.  Thoughtful  
 Curious
41.  Meticulous  
 Self-confident
42.  Original  
 Enthusiastic

---

*(c) 2006, Frank LaBanca  
Newtown High School  
12 Berkshire Road  
Sandy Hook, CT 06482  
(203) 426-7646 fax (203) 426-6573*

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FORM SUBMITTED. THANK YOU FOR PARTICIPATING IN THIS RESEARCH.

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December 6, 2006

Frank LaBanca  
33 Paugussett Road  
Sandy Hook, CT 06482

Frank,

As per our email exchange and phone conversation, I presented your research at our internal Intel ISEF staff meeting and am happy to inform you that we at Science Service are in agreement that we will aid you in your research project. This will involve providing to you the numerical results of the Intel ISEF competition on Thursday morning so that you might interact with a small sub-set of students to identify potential subjects in your study.

It is most likely that the best methodology for providing these results to you will be to provide you with a list of top scorers based on the average normalized rank score that is provided to the judging groups to begin their caucusing. Therefore, it will reflect the numerical scoring process and ensure that the students are "winning" students, but will not provide you with the final determination of student awards. We can discuss further what universe of students that we will provide you with so that you may select the 10-15 students you will actually pursue as subjects in your study.

Before we release results to you, we will ask that:

- 1) The ISEF SRC reviews the IRB documentation and approval that you receive from your institution and confirm that they are comfortable with involving Intel ISEF students in the study.
- 2) You sign a confidentiality statement ensuring that you will not share the results you are provided. This will also cover the understanding that you will be making initial contact with Intel ISEF finalists for their future involvement in your study, but that you will not be conducting interviews or presenting confidential information to them via your interaction onsite at the fair.
- 3) It will be agreed that prior to the fair we will collectively establish a list of students for which there are any considerations of confidentiality or conflict of interest. We will use this list to ensure that the results provided to you are absent any information regarding these students or their potential to win (i.e. by eliminating students from those categories, etc.)

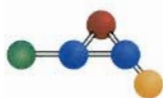
We look forward to working with you and in learning of the results of your study.

Sincerely,

A handwritten signature in blue ink, appearing to read "Michele C. Glidden".

Michele C. Glidden, Director  
Science Education Programs  
Science Service

S C I E N C E



S E R V I C E



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# Connecticut Science Fair, Inc.

[www.ctsciencefair.org](http://www.ctsciencefair.org)

G. Robert Wisner, Fair Director  
36 Laurel Wood Dr.  
Deep River, CT 06417  
860-526-9103  
director@ctsciencefair.org

January 7, 2007

Frank LaBanca  
33 Paugussett Road  
Sandy Hook, CT 06482

Dear Frank:

On behalf of the Board of Directors, I am pleased to report that the Connecticut Science Fair will participate in your doctoral research project. We will provide you with the opportunity to distribute literature to prospective student-subjects during setup on March 13, 2007 as well as discuss your project with individual students at the finalist judging on March 15, 2007. It is understood that student interviews will take place subsequent to the fair.

We will help you identify a range of quality of projects for your sample as well as provide contact information for those students. The Board requests a copy of your IRB approval documentation when it is available and prior to the fair. We look forward to learning the results of your study.

Sincerely,

G. Robert Wisner  
Chairman, Board of Directors

  
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## Completion Certificate

This is to certify that

**Frank LaBanca**

has completed the **Human Participants Protection Education for Research Teams** online course, sponsored by the National Institutes of Health (NIH), on 12/31/2006.

This course included the following:

- key historical events and current issues that impact guidelines and legislation on human participant protection in research.
- ethical principles and guidelines that should assist in resolving the ethical issues inherent in the conduct of research with human participants.
- the use of key ethical principles and federal regulations to protect human participants at various stages in the research process.
- a description of guidelines for the protection of special populations in research.
- a definition of informed consent and components necessary for a valid consent.
- a description of the role of the IRB in the research process.
- the roles, responsibilities, and interactions of federal agencies, institutions, and researchers in conducting research with human participants.

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