



# INSTITUTE OF MATHEMATICS EDUCATION, RESEARCH, AND INSTRUCTIONAL TECHNOLOGY

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To: Parents of alumni and current students in The Institute of Creative Problem Solving

From: Arthur L. Kalish  
Director of the Institute of MERIT  
Mathematics Education, Research, and Instructional Technology

Subject: Research and Technology Course

Date: March 29 2015

The Institute of MERIT is proud to offer a program entitled Research and Technology. This new program is designed for students who are interested in actively pursuing research in mathematics. It is only available to students who have successfully completed the ICPS program and who will be in grade 10 or 11 in September 2015. All students will be choosing a topic to research for the entire course. They will produce a paper for the Long Island Math Fair and prepare an oral presentation.

The Long Island Math Fair is the only one of its kind in the nation. It has allowed students who enjoy mathematics to stretch their talents beyond the regular classroom. Many students over the past few decades have commented on how much of their college interview was spent discussing their Math Fair work, since it uniquely defines their application. The Research and Technology course is the first tuition-free math research program in the country. The combination of these two offerings represents a special opportunity for our students. This is a challenging, motivational learning experience driven by the students' own intelligence, invention, and inspiration!

The coordinator of the program is Dr. Robert Gerver, a mathematics and research teacher at North Shore High School. Dr. Gerver received the Presidential Award for Excellence in Mathematics Teaching from President Reagan in 1988. He has published over 20 books as well as many articles in mathematics journals. Two of his books, *Writing Math Research Papers - A Guide for Students and Instructors*, and *Write On! Math*, will be used as the basis for the course. In addition to Dr. Gerver, guest lecturers will be brought in to broaden the scope of the program and to focus on researched based technology.

Class seminars will be based upon the following topics:

1. routine versus non-routine problems
2. defying your intuition
3. the art of technical writing, annotating, equation editing and naïve proofreading
4. finding patterns and making conjectures
5. determining a suitable and exciting research topic
6. learning to read mathematics journals
7. components of a research paper
8. preparing and critiquing oral presentations
9. learning to use Excel to perform mathematical calculations and analysis
10. using Geometer's Sketchpad and Geogebra to develop assumptions
11. calculator and computer programming.

The program will consist of 12 sessions, starting in September, and continuing through to the middle of February. No classes will run on Thanksgiving, Christmas, or 3-day weekends. Each session will take place on Saturday morning from 9 AM to 11:30 AM at SUNY College at Old Westbury.

The Saturday dates for 2015-2016 will be selected from the following:

September 19, 26

October 3, 17, 24, 31

November 7, 14, 21

December 5, 12, 19

January 9, 23

February 6.

There are a limited number of seats and traditionally there is a waiting list for such an exciting option. Before you apply, examine your Saturday morning commitments carefully to make sure you can attend all of the sessions. All participants must attend each session. This means that you and your child make a commitment to place this program as a priority. Please only apply if you can pledge to fully participate in the program—we do not want to deprive someone on the waiting list a chance to participate by having that position taken by a student with haphazard attendance.

I am very excited to be able to offer your child this wonderful opportunity free of any tuition. We do ask that, if possible, you help maintain the program for future participants by making a donation. If you and your child are interested in applying for this program, please complete the enclosed application and return it to us as soon as possible. Students will be admitted on a first come first served basis.

Sincerely,

A handwritten signature in black ink, appearing to read "Arthur L. Kalish". The signature is written in a cursive style with a large initial "A".

Arthur L. Kalish

**INSTITUTE OF MERIT**  
in conjunction with  
**THE INSTITUTE OF CREATIVE PROBLEM SOLVING FOR  
GIFTED AND TALENTED STUDENTS**

**Application for Research and Technology Course**

Please complete the entire form. If you have any questions please call or email (see below).

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

Address: \_\_\_\_\_

Phone: \_\_\_\_\_

Email: \_\_\_\_\_

Year enrolled in ICPS: \_\_\_\_\_ Grade Group (check one): 5/6  7/8  9/10

Grade as of September 2015 10  11  Check one: Male  Female

Name of School attending in September 2015 \_\_\_\_\_

Parent Signature \_\_\_\_\_

Are you currently enrolled in a research class at your school? If your answer is yes, what is the topic of your project? Do you plan to enroll in a research class at your school next year?

In your own words, please explain why you want to participate in this research and technology program. Feel free to continue your statement on additional pages.

**Please return this form by mail, fax, or email by May 16, 2015. Remember that class size is limited and that students will be accepted on a first come first served basis.**

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