



INSTITUTE OF MATHEMATICS EDUCATION, RESEARCH, AND INSTRUCTIONAL TECHNOLOGY

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of MoMath

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: April 2, 2016

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 2016. All students are required to: (1) choose a research topic, (2) write a research paper and (3) present that paper at the Al Kalfus Long Island Math Fair.

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. This is a challenging, motivational learning experience driven by the students' own intelligence, invention, and inspiration! This year there will be a \$120 participation fee, which will cover the cost of entering the Math Fair, and allay the cost of the textbook.

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 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 end of January. No classes will run on Thanksgiving, Christmas, or extended weekends. Each session will take place on Saturday morning from 9 AM to 11:30 AM at SUNY College at Old Westbury.

The 12 Saturday dates for 2016-2017 will be:

September 10, 17, 24

October 15, 22

November 5, 19

December 3, 10, 17

January 7, 21, 28 (snow make up)

IMPORTANT—READ BEFORE APPLYING: 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 are expected to 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.

I am very excited to be able to offer your child this wonderful opportunity at a minimum tuition fee. 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 cursive script, appearing to read "Arthur L. Kalish".

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 2016 10 11 Check one: Male Female

Name of School attending in September 2016 _____

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 13, 2016. Remember that class size is limited and that students will be accepted on a first come first served basis.

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