INSTITUTE OF MATHEMATICS EDUCATION, RESEARCH, AND INSTRUCTIONAL TECHNOLOGY

Director:
Arthur L. Kalish,

Institute of MERIT, SUNY College of Old Westbury

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 28, 2020

The Institute of MERIT is proud to be able to offer a program entitled Research and Technology. This 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 2020. 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!

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.

Many class sessions will be "workshops," where students bring in their laptops and work on their papers and oral presentations individually. This is a great forum to have their work checked and edited on the spot, and to exchange ideas and discuss mathematics. Writing a paper and preparing an oral presentation will require additional time input at home. The paper is completed and submitted in mid-January.

All applicants must have the time, interest, drive, and desire to complete the math research paper, oral presentation, and present at the Long Island Math Fair.

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.

There is a $200 participation fee, which will cover the cost of entering the Math Fair, and the cost of the textbook which the students can annotate and keep after the program has been completed.

The coordinator of the program is Dr. Robert Gerver, a retired mathematics and research teacher from 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.

The program will consist of 16 sessions, starting in September, and continuing through to March. No classes will be held on Thanksgiving weekend, or the weekends surrounding the winter vacation. Each session will take place on Saturday morning from 9 AM to 11:30 AM at SUNY College at Old Westbury.

The 16 tentative Saturday dates for 2020-2021 are:

September 12
October 10, 17, 24 (Oct 3 is SAT as of now)
November 7, 21
December 5, 12, 19
January 9, 23
February 6, 27
March 6, 13
March 20 (snow day make up class)
April 24 Prep for Math Fair

These dates may possibly change once we receive a copy of the Calendars from Long Island school districts.

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,

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

SUNY College at Old Westbury is closed to non-essential employees. Please complete the entire form and email it to kalisha@oldwestbury.edu. Please DO NOT, snail-mail the completed form or your check. We are unable to receive any mail at this time.

Class size is limited so students will be accepted on a first come first served basis.

Students Name: _____

Address: _____

Phone: _____

Email: _____

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

Grade as of September 2020 10 ☐ 11 ☐ Check one: Male ☐ Female ☐

Name of School attending in September 2020 _____

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 11, 2020. The fee to enroll in the class is $200. Please make your check out to: Research Foundation of SUNY. Remember that class size is limited and that students will be accepted on a first come first served basis.

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