



**Summer Opportunity in Applied Research**

**A great way to spend part of the summer--exploring mathematics!**

**SOAR through an intensive three-week mathematical sciences camp!**

**SOAR 2001** takes place from July 30 to August 17, 2001, at the University of Toronto's St. George campus. It runs Monday through Friday, from 10:00 am to 3:00 pm. The topic this year is **GEOMETRY**.

The **SOAR into Mathematical Sciences Summer Camp** is an opportunity to explore a challenging mathematical topic in a stimulating environment. Excellent high school students, who can easily grasp new concepts, will soar into these investigations of sophisticated university-level mathematics and be challenged to think in different ways. **SOAR 2001** will be a great way to see what life at the University of Toronto and mathematical research are really like. You'll have the opportunity to explore and use campus resources such as the mathematics library and some computer facilities, as well as participate in recreational activities during the social events. A typical week at **SOAR 2001** will include lectures, tutorials, problem-solving sessions, and related games. Since mathematics is best learned by doing, emphasis will be on solving numerous problems related to **geometry**.

**About the Topic**

*"A scientist worthy of the name, above all a mathematician, experiences in his work the same impression as an artist; his pleasure is as great and of the same nature."*

-Henri Poincare

Geometry is perhaps the best area of mathematics for demonstrating the beauty of mathematical concepts. Although it has many practical applications in fields such as architecture, engineering, and physics, geometry also has strong appeal for people seeking beauty in the world.

Originating with people's needs for measurement in everyday life, it has become one of the most central parts of mathematics, with the objective of unraveling various properties of geometric objects as simple as a point or a line and as complicated as higher dimensional manifolds.

In this investigation of geometry, our intuitive approach will be supported by the mathematical precision necessary for deeper understanding of the concepts. We will discuss a variety of related topics such as classical geometry, geometry in higher dimensions, perspective and projective geometry, tilings and fractals. This program will be a good opportunity for getting acquainted with some of the most beautiful ideas in mathematics from centuries ago to the present time.

**Who can attend?**

The program is for students who are currently in grades 10 to OAC. Acceptance into SOAR will be based on a competitive process which takes into consideration mathematical aptitude, personal maturity, motivation, and the ability to work in a team. Other desirable assets are experience with Mathematica, Maple, or other mathematical software, descriptive writing proficiency and artistic ability. **SOAR** receives applications from some of the best students in Ontario and elsewhere.

Residence information is available for those who live beyond an easy commute. We cannot take responsibility for the students outside program hours.

**How much does it cost?**

A fee of \$350 per student, payable to 'University of Toronto', is required for the three week program and should accompany the application form. Refunds (minus a \$35 administration charge) will only be issued up to June 29th. **SOAR** is a non-profit program; the fee assists in covering the cost of lectures and computer time, class notes, occasional lunches, daily snacks and other incidentals.

*NOTE: There is financial assistance available on the basis of need. The Department of Mathematics will support your request to reduce the cost of the camp **jointly** with your school. If you feel that you would need such assistance, please indicate this fact on your application.*

**How to apply?**

Mail the **application form** and the **teacher recommendation form**, along with your **registration fee** and the **required supporting materials** (as listed on the application form), to the address below by **Friday, June 1, 2001**. Late applications will be considered only if space is still available.

**SOAR 2001 Mathematical Sciences Camp**

Department of Mathematics  
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100 St. George St, Room 4072  
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Direct your inquiries to the address on the left or:

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