

APPLICATION KIT

The RUTGERS YOUNG SCHOLARS PROGRAM in DISCRETE MATHEMATICS

July 8 – August 2, 2019

"Our Twenty-Eighth Summer"

"We're looking for students who are interested in math. Is that you?"

The Rutgers Young Scholars Program in Discrete Mathematics is sponsored by the Rutgers University Department of Mathematics and DIMACS, the Center for Discrete Mathematics and Theoretical Computer Science [DIMACS], and is supported by a grant from the National Security Agency (NSA).

Do you ...

- ... *like to work on challenging and puzzling problems*
- ... *like to look at a problem in many different ways*
- ... *get involved, make conjectures, and take risks*
- ... *enjoy the critical exchange of ideas with other students*
- ... *look forward to living in the math world for a month*
- ... *enjoy and feel compelled to do mathematics*
- ... *thrive on complexity and problems which have more than one answer*
- ... *like to reason out problems and play with concepts*
- ... *learn new material quickly and apply this learning to new situations*
- ... *concentrate on something you like for a long period of time*

Then this program is for you. Here is your opportunity to ...

- ... *experiment with some interesting mathematical problems*
- ... *spend four weeks on a college campus doing mathematics with people like yourself*
- ... *meet a variety of professional mathematicians and learn about what they do*

Come to the Rutgers Young Scholars Program ...

- ... *come join 30 high school students who share your fascination with mathematics.*
- ... *attend a variety of mathematical programs and activities in a non-competitive environment.*
- ... *learn about careers in the mathematical sciences; these programs will involve industrial as well as academic mathematicians.*

The instructional staff includes well-known mathematicians. Teaching assistants who are undergraduate Rutgers students majoring in mathematics or computer science provide additional academic support. You will spend a lot of time with this staff; we hope that as a result you will understand what mathematicians do and why.

The focus of the program will be discrete mathematics, although the program will **not** be conducted like a course. Success will be measured in terms of your enthusiasm for the subject, not by the amount of material covered.

Your daily schedule will be full and will include various recreational and social activities.

Remember, this will be an intensive program. We will expect you to participate actively in all of the activities. It will be fun and exciting, but it will require your concentrated effort. You can think of the program as “math camp,” but you must remember that you will be doing math all day, though not in the evening. Be sure that you want to make this commitment!

COMPLETING APPLICATION MATERIALS

A completed application includes all of the following:

1. TYPED OR PRINTED (in black ink) responses to the questions on the Student Application Form (including the essay mentioned in the middle of the Student Application Form);
2. a completed Parent Signature Form;
3. a letter of recommendation from your teacher, who should mail the recommendation directly to our office, as well as a copy of your transcript of your high school record;
4. your solutions (partial or complete) to the 2019 Problems to Explore .

We recommend that you make a photocopy of your solutions prior to sending them in for safe-keeping and also in case we call to discuss your responses.

These problems are challenging and most applicants will successfully solve only some of them; so don't get discouraged by what you haven't done ... just show us what you have done, including any partial solutions. Please make sure to **show us all your work** and, wherever appropriate, **explain your reasoning**.

Applications will be reviewed on a first-come first-served basis until the program is filled. In some years, the program had more applicants than could be accommodated. We therefore encourage you to submit your completed application **as soon as possible**.

Partial scholarships are available. **You should not be discouraged from applying because of financial considerations.** Once you are accepted into the program, your parents will be asked if they wish to apply for financial assistance and, if so, will be asked to complete an application form and provide additional materials. Applications for financial assistance must be received by May 1, 2019, so **if you expect that your family will apply for a scholarship, please be sure to submit your completed application, including solutions to the problems, by April 17.**

MAILING INSTRUCTIONS

Please send the completed forms via First Class Mail. Because of the various weights of the enclosures, it would be wise to verify the correct postage to assure prompt delivery.

Materials should be submitted to the following address:

**Rutgers Young Scholars Program
224 SERC – c/o CMSCE
118 Frelinghuysen Road
Piscataway, New Jersey 08854**

Alternatively, the materials may be scanned and emailed to joer@dimacs.rutgers.edu with "RYSP Application" in the subject line.

RUTGERS YOUNG SCHOLARS PROGRAM :: SUMMER 2019 STUDENT APPLICATION FORM

Student Name.....Cell Phone ().....

Student AddressHome Phone ().....

City State.....Zip.....

Social Security Number Date of Birth Class of 2020 2021 2022
*** - ** - ****

Female Male Email Address (print clearly)

High School School phone ().....

School Address.....

City.....State..... Zip

Name and email address of Teacher who will provide a letter of recommendation and transcript for you:

.....

List the math courses you will have completed this year:.....

List the math courses you plan to take next year:.....

If you have previously attended a summer academic program, please name the program[s] and date[s]:

.....

On a separate sheet(s) of paper, write an essay that tells us about (a) your interest in mathematics, (b) a specific math topic that you have found to be particularly exciting, and (c) why you would like to attend this summer program.

Optional (used for statistical purposes)

How would you best describe yourself (please check one):

- | | |
|--|---|
| <input type="checkbox"/> Native American | <input type="checkbox"/> Hispanic(including Puerto Rican) |
| <input type="checkbox"/> Asian or Pacific Islander (including Indian subcontinent) | <input type="checkbox"/> White, Anglo, Caucasian |
| <input type="checkbox"/> African American | <input type="checkbox"/> Other (Specify) |

List any friends or relatives who have attended the Young Scholars Program:

Name:..... Year.....

How did you learn about the program? (You may check more than one)

- | | | |
|---|---|--|
| <input type="checkbox"/> YSP Website | <input type="checkbox"/> Parents/Relatives | <input type="checkbox"/> Teacher Recommended |
| <input type="checkbox"/> Former Program Student/Alumni | <input type="checkbox"/> Guidance Counselor | <input type="checkbox"/> Brochure |
| <input type="checkbox"/> Newspaper or Publication (name and section)..... | | |
| <input type="checkbox"/> Summer Program Guide (name and section)..... | | |
| <input type="checkbox"/> Other (please explain)..... | | |

To the student:

Please print your name below and give this form to a parent or guardian to complete. Both parents may complete the form together, if they wish.

STUDENT'S NAME

To The Parent or Guardian

Your daughter/son is applying for admission to the Rutgers Young Scholars Program in Discrete Mathematics, a four-week, summer, residential program for mathematically talented high school students. The program will take place on the Rutgers University Busch Campus in Piscataway on the weekdays between July 8 and August 2, 2019.

The cost of the program will be \$4,000; this will cover tuition, materials, and meals and lodging from Monday morning to Friday afternoon of each week. Partial scholarships are available. **No student should be discouraged from applying because of financial considerations.** Once your daughter/son is accepted into the program, you may want to apply for financial assistance and, if so, you will be asked to complete an application form and provide additional materials.

Please indicate here any special considerations (medical, physical, emotional, psychological, etc.) we should be aware of in terms of our responsibility to your child's education and general well-being for a month. This information will be kept strictly confidential. (You may use the back side of this page if you need additional space)

Special Considerations: _____

Permission

"My daughter/son has permission to attend the Rutgers Young Scholars Program for the entire four week program from July 8 to August 2, 2019."

Your Name (please print) Relationship to Student

Home Address

City State Zip

Daytime telephone Evening telephone Cell phone

Email Address

Signature of parent or legal guardian.....

INSTRUCTIONS:

Please tell us about the student you are recommending for the Rutgers Young Scholars Program in Discrete Mathematics.

Include information about the student's performance (including cumulative average and PSAT/SAT scores if available).

Please attach a transcript of the student's high school record.

Tell us about your student's abilities and interests, about the personal characteristics that make her or him most likely to benefit from and enjoy a four-week intensive exposure to a program in the mathematical sciences. Include specific examples drawn from your own experiences with the student.

You may write your remarks on the other side of this page and/or on a separate sheet of paper. Please be sure to write your student's full name in your recommendation.

STUDENT NAME: _____

STUDENT'S EMAIL ADDRESS: _____

In view of this student's interest and ability in mathematics, I recommend that s/he be accepted to the Rutgers Young Scholars Program in Discrete Mathematics.

Signature of recommending teacher _____

Name (please print) _____

Email address: _____ Cell phone: _____

School _____ School Phone Number () _____

School Address _____

City _____ State _____ Zip _____

Return this form, a Letter of Recommendation and Transcript to:

**Rutgers Young Scholars Program
224 SERC – c/o CMSCE
118 Frelinghuysen Road
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or email to joer@dimacs.rutgers.edu with "RYSP Recommendation" in the subject line

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