



## 2018 Brooklyn College Science Research Day

### Brooklyn College Science Research Day 2018

We invite you to participate in the 2018 Brooklyn College Science Research Day by either presenting or by volunteering to serve as a judge. The event will be held on Friday, May 4, 2018 in the Student Center. The deadline for abstract submission and to sign up to be a judge is Wednesday, April 18, 2018. Science Day abstracts will be accepted for review from undergraduates, graduate students and post-docs affiliated with Brooklyn College. We will also review abstract submissions from high school students who are working with a faculty mentor from Brooklyn College. No other high school submissions will be reviewed or accepted.

#### 1. For Science Day Presenters:

☐ I would like to present my research.

#### 2. For Science Day Judges:

☐ I would like to volunteer as a judge.

☐ I would like to recommend colleagues, postdocs, graduate students and/or undergraduates as potential judges.



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### Instructions for Abstract Submission

This application will permit you to submit your 2018 abstract for Science Day electronically. All fields are required to be completed or the abstract will not be accepted. All abstracts MUST be submitted by 5 p.m. EST on Wednesday, April 18, 2018. No exceptions will be made. If you have questions about the submission rules or procedures, please contact: [MARC@brooklyn.cuny.edu](mailto:MARC@brooklyn.cuny.edu)

before the final deadline.

You will receive an acknowledgement that your abstract has been received when you submit it. An email about whether your abstract has been accepted as submitted or requires editing will be sent to the email address provided below. If you do not receive an acknowledgement of receipt within a few days of your submitting it, please contact us at 718.951.5000x1709 or by email at [MARC@brooklyn.cuny.edu](mailto:MARC@brooklyn.cuny.edu).

There is a length limitation (1,800 characters) for the abstract itself. We recommend you type your abstract into Word or other word processor and review the character count before copying it into the box below.

\* 3. Please enter the first and last names of the presenter:

First Name:

Last Name:

4. If you are a CUNY student, please enter your CUNY EmplID:

\* 5. Please enter a telephone number where you can be reliably reached, and indicate whether this is a daytime or evening number:

Phone number:

Best time to call (e.g.  
morning, evening):

\* 6. Please enter an email address that you check regularly and can be reliably reached:

\* 7. Please enter your home address:

Street Address

Street Address 2

City

State

Zip Code

\* 8. Please enter your status:

☐ High School Student

☐ Graduate Student

☐ Undergraduate Student

☐ Post-doctoral Fellow



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9. Please enter the high school you attended before entering college:

High school name

City, State



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\* 10. Please enter your current research affiliation (Department, College, High School, if applicable):

\* 11. Please choose the discipline of your abstract:

- ☐ Biology
- ☐ Chemistry
- ☐ Computer Information Science
- ☐ Engineering
- ☐ Earth and Environmental Science
- ☐ Health and Nutrition Science
- ☐ Mathematics
- ☐ Physics
- ☐ Psychology
- ☐ Speech Communication & Arts Sciences

\* 12. Please enter information about your Research Advisor:

First Name:

Last Name:

Institution:

Academic Department:

Office Telephone #:

Email Address:

13. Enter the source of the grant that supports your project (if relevant):

## Brief Instructions for writing abstracts

Check with your advisor about helping with the abstract. The purpose of an abstract is to provide a summary of your project that will inform interested individuals of the contents. The wording must be written in a manner so that any scientifically minded individual, even those from another discipline, can understand the project's important points.

The following should each be summarized in a few sentences:

- Background information necessary to understand the project and its importance.
- The problem that was investigated and the hypothesis.
- Outline of the materials and methods used in the actual experimentation.
- Summary of the results obtained from experimentation.
- The conclusions drawn from results.
- The importance or potential applications that the research offers.

Do not be concerned with including all of the details in the abstract. The key point to remember when writing an abstract is to keep the wording brief and concise. It is also important to use complete sentences and to avoid personal pronouns like "I" and "My." Abstracts should be long enough to provide the necessary information needed to understand the project's basic points and importance, but should be no more than 1,800 characters, including spaces.

### ABSTRACT EXAMPLE (from Science Research Day 2001):

The goal of this study is to isolate the gene controlling sexual fusion in *Chlamydomonas*. In the attempt to isolate this gene we are using an isolated fusion defective mutant (gain-b int-) to screen the indexed genomic library of *Chlamydomonas* DNA. The purpose of using the library is to find a DNA segment that will make the mutant fusion competent. Once we find the DNA segment that will make this mutant fusion competent, we can retrieve the segment of DNA that complements the mutants and then clone the gene. It is hoped that this technique will lead us to a single gene that directly controls gametic fusion in *Chlamydomonas*. Once the gene is found we will be able to determine the sequence and analyze the structure of the fusion protein.

- \* 14. Please type the abstract title in CAPITAL letters (must be no more than 200 characters including spaces):

\* 15. List the authors' names (first name, middle initial, last name), and affiliation for each author.

Author 1:

Author 2:

Author 3:

Author 4:

Author 5:

Author 6:

Author 7:

Example: John R. Doe, Brooklyn College.

16. A maximum of two presenters are allowed per poster. If there will be more than one presenter, please list the name of the second student presenter, along with the affiliation. *See example below.*

*The presenters must be present at the poster for the poster to be presented at Science Day. No absentee posters will be accepted.*

Presenter 2:

Example: John R. Doe, Department of Chemistry, Brooklyn College.

17. Please enter the second presenter's status:

☐ High School Student

☐ Graduate Student

☐ Undergraduate Student

☐ Post-doctoral Fellow

\* 18. Compose your abstract in the box below. The abstract must be no more than 1800 characters including spaces. The easiest way to do this is to write the abstract in a program such as MS Word and use the Review function to count characters. Then copy into the box below when the completed abstract has 1800 characters or less.

After your abstract is entered it will be displayed as a single line and you will see only a part of it. Don't worry, when you move to the next page you will be able to see and review the whole submitted abstract.

19. Two judges will be assigned to each poster. Please list any possible judging conflicts (e.g. former mentors, former research project managers) for your research poster:

Potential conflicts:



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\* 20. Please review your abstract submission:

{{ Q18 }}

Does your abstract need editing before submitting?

- ☐ My abstract looks great and I don't need to make any changes.
- ☐ I need to edit my abstract.



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## Instructions for posters

- Posters should be no larger than 42" wide by 36" high.
- Posters should indicate the title, the authors' names, and institutional affiliations.
- Posters should be constructed either to be pinned or taped to the wall, or stand on a tabletop (see examples below). You must tell us when you submit which format (wall or table) you will be using. If you change your mind and don't tell us, we can't guarantee that there will be space for your poster as space is tight.
- Posters should be clear and textual material kept brief. Illustrations, graphs, and text should be legible from a distance.
- Posters may have more than one author, but can be entered in only one division. Please tell us which division the poster will be in on the abstract submission form.
- Student presenter(s) must be present throughout the session, and should be prepared to discuss the work with judges and visitors. Advisors are encouraged to attend, but the poster should be presented by the student.

Wall

BIO-28

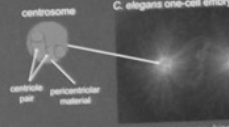
### The role of *sgo-1* in *Caenorhabditis elegans*

Anthony James, Saul Betesh, and Dr. Mara Schwarzshtein Ph.D.  
Department of Biology, Brooklyn College of the City University of New York

**Brooklyn College** The City University of New York

#### Introduction

Aneuploidy is a major cause of defects in birth, genetic disorders and cancer. This aneuploidy can be attributed to defects in chromosome partitioning during meiosis, the specialized cell division program that generates the haploid gametes. Accurate chromosome partitioning depends on proper regulation of sister chromatids and centrioles separation.



C. elegans one-cell embryo

Schwarzshtein, M. (n.d.).

Previous research has shown that several proteins are responsible for maintaining both sister chromatids and centrioles during cell division. The same protease (Separase) is responsible for separating sister chromatids and centrioles during cell division. The tissue culture systems remained controversial as to whether or not centrioles and centrosomes are very different structures and unlikely their separation was regulated by similar mechanisms.

**Goal:** Test whether proteins regulating sister chromatids and centrioles separation do so by similar mechanisms or by different mechanisms.

#### Shugoshin prevents sister chromatid and centriole separation.

**Figure 2:** Shugoshin\* (Sgo-1 in *C. elegans*) protects cohesin rings removal by Separase.

\*Watanabe, Yoshinori.

\*Shugoshin: Guardian Spirit at the Centromere. Science 307: 103-106, 2005. Web. 16 May 2006.

It has been proposed to prevent cohesin from being removed by Separase in centrioles in tissue culture.

Centriole and chromatid phenotypes in *sep-1* and *sgo-1* in *C. elegans* will provide information about the mechanism of regulation sister chromatids and centrioles separation.

It is known that *Sep-1*, in addition to promoting sister chromatid separation, it promotes centriole separation in the meiotic division of spermatocytes. Initial analysis also showed that *SGO-1* is also required for centriole separation. The analysis of double mutants will allow us to assess whether the function of *Sep-1* and *Sgo-1* is similar in both sister chromatids and centrioles.

#### The Cross Scheme Part 1

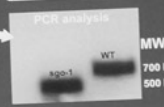
4a.  $P_0$   $ht-2/sep-1;+/+$   $\times$   $+/+;sgo-1/sgo-1$

$F_1$   $ht-2/+;sgo-1/+$   $\times$   $+/+;sgo-1/sgo-1$

$F_2$   $ht-2/+;sgo-1/sgo-1$

4b. Genotype

PCR analysis



4c.  $P_0$   $ht-2/+;sgo-1/sgo-1$   $\times$   $sep-1/sep-1;+/+$

$F_1$   $ht-2/sep-1;sgo-1/+$

$F_2$   $sep-1/sep-1;sgo-1/sgo-1$

**Figure 4:** Outline of the genetic crosses utilized to obtain double mutants: obtaining *ht-2/+;sgo-1/sgo-1* mutants (6a.).

**Methods**

Understand the role of *sgo-1* in Centriole Disengagement

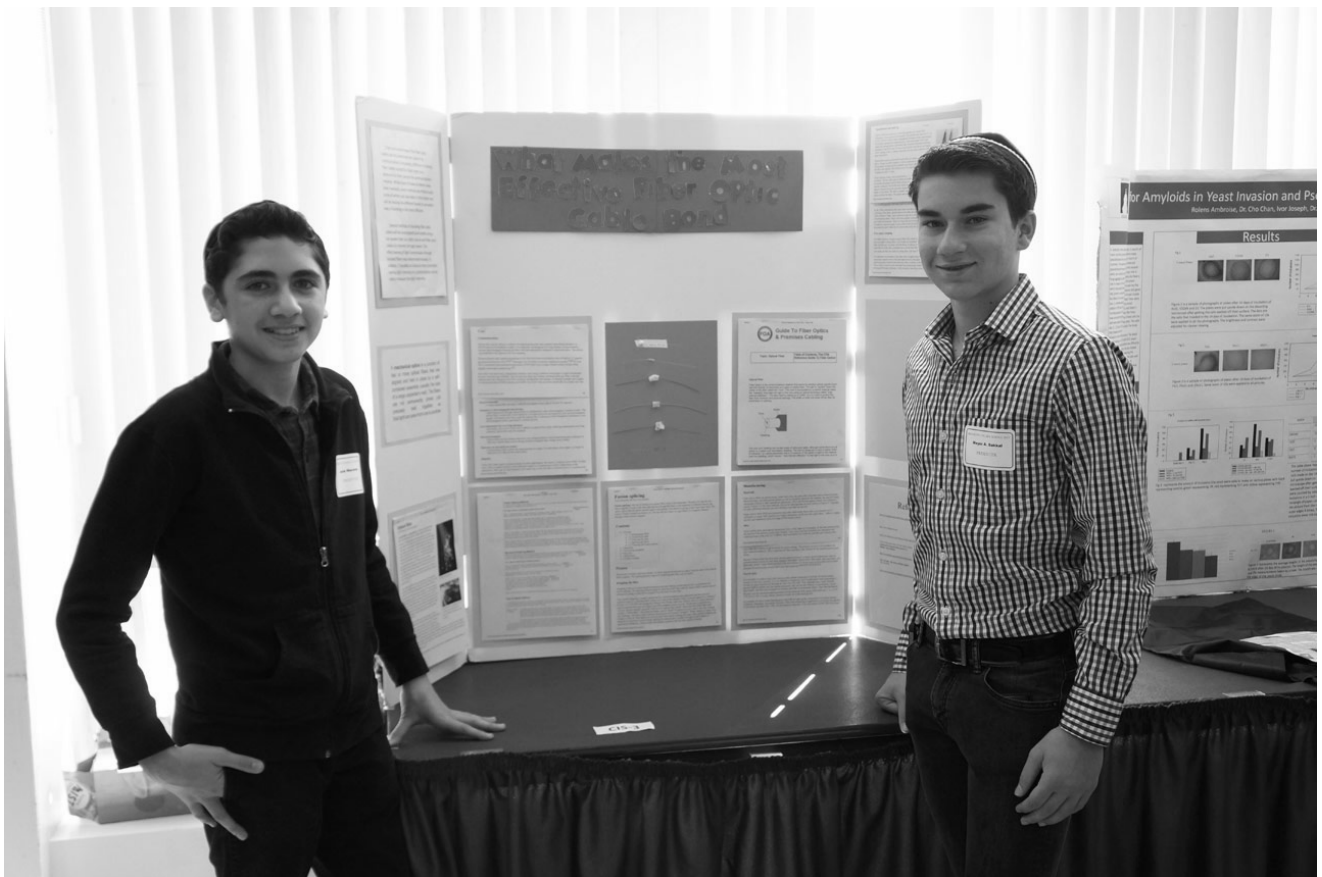
Look for any obvious Phenotypic differences in the double mutants compared to WT.

Measure the size of the arm "hook-like" compared to WT.





Table



\* 21. Some posters are constructed to hang vertically on a poster board or wall, and others to stand by themselves on a table. Please indicate which format you will be using. You must choose a presentation format as your poster will be assigned a display location based on this choice.

☐ Wall

☐ Table



## 2018 Brooklyn College Science Research Day

We invite you to participate in the 2018 Brooklyn College Science Research Day by volunteering to serve as a judge. The event will be held on Friday, May 4, 2018 in the Student Center. The opportunity for students to present their research projects to others in a public setting is a very important part of scientific research. We could not do this without the cooperation of judges like you. We encourage you to help support student research by volunteering as a judge. Generally, you will be emailed 2-4 abstracts prior to Research Day to familiarize you with your assigned posters. We need at least two judges for each poster. Eligible judges are faculty, postdocs, graduate students and undergraduates with significant research experience. The posters are judged in divisions for high school, undergraduate and graduate students, and will be displayed from 10am to 12pm. An awards ceremony and lunch for participants and judges follows the poster session.

If you are unable to volunteer, we would still like your recommendations for others who could potentially serve as judges.

If you have any questions, please contact us at 718.951.5000x1709 or by email at [MARC@brooklyn.cuny.edu](mailto:MARC@brooklyn.cuny.edu).

If you would like to see the presenter requirements to submit abstracts, visit the [Brooklyn College Science Day website](#).

22. Please enter your contact information:

Name:

Email:

Department:

23. I would be willing to serve as a judge.

☐ Yes

☐ No

24. Please indicate your highest degree:

☐ PhD

☐ Masters

☐ Undergraduate

\* 25. Please select your categories of expertise:

☐ Chemistry

☐ Biochemistry

☐ Biology

☐ Neuroscience

☐ Psychology

☐ Anthropology

☐ Geology

☐ Environmental Sciences

☐ Health and Nutrition Science

☐ Speech

☐ Education

☐ Quantitative Sciences

☐ Computer Information Sciences

☐ Physics

☐ Engineering

26. Please recommend potential judges whom we should contact:

Colleague 1 Name:

Colleague 1 Email:

Colleague 2 Name:

Colleague 2 Email:

Colleague 3 Name:

Colleague 3 Email:



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27. Do you have any additional questions and wish to be contacted by email?

☐ Yes

☐ No