



A Biotechnology Institute initiative
in collaboration with sanofi-aventis and sanofi pasteur

May 17-19, 2009
Atlanta, GA

EXTENDED Deadline is February 6, 2009*

***Submissions must be postmarked BEFORE February 6, 2009 and arrive at the Biotechnology Institute
NO LATER THAN February 6, 2009**

To enter the sanofi-aventis International BioGENEius Challenge, follow this path:

Please note: Individual project submissions ONLY are eligible this year.

1. First, submit your application package (including your research project description) to the Biotechnology Institute by **February 6, 2009**. Submissions must be postmarked BEFORE February 6, 2009. A panel of judges will review the research project descriptions and select two finalists from each state. These two finalists will advance to the sanofi-aventis Regional BioGENEius Challenge. All students submitting a project will receive a Certificate of Participation, which they can cite on their resume.
2. If you are selected as a state finalist, you are eligible to receive a **\$400** travel award and an invitation to compete in a spring 2009 sanofi-aventis Regional BioGENEius Challenge event. At the Regional Challenge, finalists will present their projects to a panel of judges who will select two finalists from each region. These two finalists will advance to the sanofi-aventis International BioGENEius Challenge.
3. If you are selected as one of the two regional finalists, you will receive an **all-expense paid trip** to compete at the sanofi-aventis International BioGENEius Challenge in Atlanta, GA (May 17-19, 2009). The final competition takes place during the annual Biotechnology Industry Organization (BIO) Annual Convention. At the International Challenge, finalists present their projects to a panel of judges. The first place winner receives a **\$7,500** cash award. Other awards include **\$5,000** for second place, **\$2,500** for third place, and **\$1,000** for fourth place. Each remaining finalist will receive a **\$500** Honorable Mention Award.

Key Dates:

February 6, 2009	Application Package Submission Deadline (Submissions must be postmarked BEFORE 2/6/09)
March 6, 2009	State Finalists Announced
March/April 2009	sanofi-aventis Regional BioGENEius Challenges (See page 5 for dates)
May 17-19, 2009	sanofi-aventis International BioGENEius Challenge Atlanta, GA

sanofi-aventis International BioGENEius Challenge

An intensive and valuable research experience for high school students

BioGENEius Web site: http://biotechinstitute.org/programs/biogeneius_challenge.html

This is an application package (a total of 17 pages) for U.S. students interested in participating in the 2009 sanofi-aventis International BioGENEius Challenge. Please note that in order to participate in the sanofi-aventis International BioGENEius Challenge you must submit your research project description for state selection*; state winners compete in one of the sanofi-aventis Regional BioGENEius Challenges, and regional winners compete in the sanofi-aventis International BioGENEius Challenge. (*Georgia and Tennessee applicants please visit contact your state sponsor for more information on how to participate)

Please visit http://biotechinstitute.org/programs/biogeneius_challenge.html for more details about the BioGENEius process, articles on biotechnology, testimonials from former participants, information about past projects, and links to other interesting biotechnology web sites.

Instructions and Reminders

Participants must submit the completed application package (Parts I, II, IIIA, IIIB, IIIC, IIID, and IV) postmarked BEFORE February 6, 2009. Please submit a **printed copy** of the application package and an **electronic copy** on CD-Rom. Each part of the application package should be a **separate document** (Word document, text document, or PDF).

Student Eligibility for the sanofi-aventis International BioGENEius Challenge

1. Students enrolled in biology or science-related courses (Grade 9 to 12) in any public or private school within the United States.
2. Individual students only may submit only **ONE** project for this competition.
3. Students in Canada and Western Australia may visit www.cberc.ca and www.westernaustralia.com respectively for information on how to participate.

Project Guidelines

For the purposes of this program, we will use the following definition of biotechnology: "Biotechnology is the use of the knowledge of biological systems to produce goods and services."

1. A project is deemed relevant if its content relates to the various applications of biotechnology such as health care, agriculture and forestry, food processing, mining and the environment, and forensics; and it applies the knowledge and techniques of the current courses at school and/or other scientific studies such as biochemistry, molecular biology, cell biology, microbiology and biotechnology.
2. The project must include scientific experiments that recognize and control all significant variables and demonstrate excellent collection, analysis and presentation of data.
3. The project should not involve the use of any dangerous chemicals or biohazardous materials, except under the direct supervision of qualified personnel with appropriate permission and consent forms completed and on file. All required permissions and paperwork of the International Science and Engineering Fair must be completed in **advance** of conducting the project.
4. The project should conform in general with the guidelines for International Science and Engineering Fair Guidelines.

Ethics Statement

The sanofi-aventis International BioGENEius Challenge has adopted the Intel ISEF ethics statement which is stated below to which each student must adhere. Students found in non-compliance with these principles will be automatically disqualified.

*“Scientific fraud and misconduct are not condoned at any level of research or competition. Such practices include plagiarism, forgery, use or presentation of other researcher’s work as one’s own and fabrication of data. Fraudulent projects will fail to qualify for competition in affiliated fairs or the” sanofi-aventis BioGENEius Challenge.*¹

1. Society for Science and the Public. "International Rules for Precollege Science Research: Guidelines for Science and Engineering Fairs, 2008-2009." International Science and Engineering Fair Forms and Document Library. Ed. ISEF SRC. 2008-2009. Science for Science and the Public. 4 Sep 2008 < <http://sciserv.org/isef/document/Rule2009.pdf>>.

What is in this Application Package and what needs to be submitted?

Page no.	Description	Submission Required	Remarks
1	Introduction to the sanofi-aventis International BioGENEius Challenge		<ul style="list-style-type: none"> Carefully read and note the deadline for submission
2	The process of the BioGENEius Challenge		<ul style="list-style-type: none"> Includes ethics statement, student eligibility, project guidelines, submission deadlines, how projects are judged, and award information
6	sanofi-aventis Regional BioGENEius Challenges		<ul style="list-style-type: none"> Date and location of regional challenges Regional Coordinator contact info
8	Part I – Student Information	✓	<ul style="list-style-type: none"> 1 page to be submitted Must be fully completed
9	Part II – School Information	✓	<ul style="list-style-type: none"> 1 page to be submitted Must be signed by the School Principal
10	Part IIIA - The Research Project Description	✓	<ul style="list-style-type: none"> Up to 4 pages describing your research project to be submitted Use appropriate section headings as instructed
11	Part IIIB - Project Appendices	✓	<ul style="list-style-type: none"> Up to 2 pages for appendices Must be signed by your supervising teacher
11	Part IIIC – References	✓	<ul style="list-style-type: none"> Annotated bibliography in standard MLA/APA format. Use at least 3 non-internet sources. Journal articles published online and in hardcopy may be used as non-internet source. For each source indicate in one sentence how the source was used as a part of your project. All sources must be credible.
11	Part IIID – Laboratory Notebook	✓	<ul style="list-style-type: none"> Must be complete notebook, numbered, consecutive pages A copy may be made for submission (paper or electronic)
12	Part IV – Research Setting & Adult Supervisor Form	✓	<ul style="list-style-type: none"> 1 page to be submitted Must be signed by supervising adult
13	Part V - Declaration, Discharge and Release of Information	✓	<ul style="list-style-type: none"> Must be signed by the student(s) and/or their parents / guardians
15	Part VI - Sample Project Description		<ul style="list-style-type: none"> A sample to guide you in preparing your research project description.
16	Part VII - State Selection Judging Criteria		<ul style="list-style-type: none"> The Evaluation Committee will evaluate your research project description based on these criteria
17	Part VIII – Regional and International Judging Criteria		<ul style="list-style-type: none"> The Evaluation Committee will evaluate your project display and presentation based on these criteria

Submission of Application Package

- The application package (Parts I, II, IIIA, IIIB, IIIC, IV, and V) must be submitted in **printed form** (IIID may be submitted via CD-Rom or USB drive).
- Include an **electronic copy** of your submission on CD-Rom or emailed to BioGENEius@biotechinstitute.org including “2009 sanofi-aventis BioGENEius Application” in the subject line. **Each part** (Parts I, II, IIIA, IIIB, IIIC, IIID, IV, and V) **should be a separate document** (Word document, text document, or PDF).
- Please note that all applicants **must include a current E-mail address** in their application form. Students will be contacted by email. If a current e-mail address is not included the student may not receive timely notification.
- Do not use report covers, binders, or folders.
- Application packages will not be returned. Please retain a copy for your records.
- Applications must be **postmarked BEFORE February 6, 2009** to be eligible.

Submission Deadline: February 6, 2009

(All materials at the Institute by February 6, 2009)

Applications should be sent to:

2009 sanofi-aventis BioGENEius Challenge

Biotechnology Institute

2000 N 14th Street, Suite 700

Arlington, VA 22201

**All information in the application package will be treated as confidential and used by the Institute as per the Release of Information form. The Release of Information form is enclosed in this application package as Part V and must be signed and submitted with the application package.

For additional information or questions, please contact the Biotechnology Institute at 703.248.8681 or email at: BioGENEius@biotechinstitute.org.

How Projects are Judged

State Selection

A panel of judges will review all submitted research project descriptions, (Parts III A-D), references (Part IV), and the research setting and adult supervisor form (V) and select two finalists from each state based on the judging criteria (see Part VII). These two finalists will advance to the sanofi-aventis Regional BioGENEius Challenge.

sanofi-aventis Regional BioGENEius Challenges

At the sanofi-aventis Regional BioGENEius Challenge, an expert panel of judges will select the two winning projects, using the judging criteria (see Part VIII). Students are not only evaluated on the quality of their research and their “rollup” poster display, but are also evaluated on their responses to questions relating to their scientific knowledge as well as potential commercial applications of their research.

sanofi-aventis International BioGENEius Challenge

At the sanofi-aventis International BioGENEius Challenge, an expert panel of judges will select the winning projects, using the judging criteria (See Part VIII). Students are not only evaluated on the quality of their research and their “rollup” poster display, but are also evaluated on their responses to questions relating to their scientific knowledge as well as potential commercial applications of their research.

Awards

U.S. State Finalists

Two finalists from each state are eligible to receive a \$400 travel award and an invitation to compete in one of the spring 2009 sanofi-aventis Regional BioGENEius Challenges. See pages 5-6 for information regarding the Regional Challenges.

U.S. Regional Challenge Awards

Two finalists from each region (and a chaperone) will receive an **all-expense paid trip** to compete in the sanofi-aventis International BioGENEius Challenge in Atlanta, GA (May 17-19, 2009).

International Challenge Awards

At the sanofi-aventis International BioGENEius Challenge, the first place winner receives a \$7,500 cash award. Other awards include \$5,000 for second place, \$2,500 for third place, and \$1000 for fourth place. Each remaining finalist will receive a \$500 Honorable Mention Award.

What to prepare and bring to the competition if you are selected as a Regional/International finalist

- Roll up poster (not stand alone)
 - Instructions on the sanofi-aventis BioGENEius site
 - http://www.biotechinstitute.org/programs/documents/2007BioGENEiusrollupPosterInstructions_002.pdf
- Laboratory Notebook
- Project description
- Bibliography
- Optional: Powerpoint presentation (If you opt to do a powerpoint presentation you must provide a full charged laptop. Power sources are not guaranteed)*

sanofi-aventis Regional BioGENEius Challenges

If you are selected as a state finalist, you be invited to compete in one of the spring 2009 sanofi-aventis Regional BioGENEius Challenges and are eligible to receive a \$400 travel award to attend the competition. At the Regional Challenge, finalists will present their projects and their “rollup” poster display to a panel of judges who will select two finalists from each region. These two finalists will advance to the sanofi-aventis International BioGENEius Challenge. Please contact your regional coordinator if you have any questions regarding the sanofi-aventis Regional BioGENEius Challenge in your area.

“Rollup” poster instructions can be found on the BioGENEius website:

http://biotechinstitute.org/programs/biogeneius_challenge.html

Region	Regional Challenge	This region includes the following states:	Regional Coordinator(s):
Midwest (MW)	<p><i>sanofi-aventis Midwest Regional BioGENEius Challenge</i></p> <p><i>March 21, 2009</i> <i>Saturday</i> <i>Minneapolis, MD</i></p>	Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.	<p>PRIMARY CONTACT: Sharon Hollister Alley Institute 1550 Utica Avenue South, Suite 725 St. Louis Park, MN 55416 Phone: (612) 388-5324 E: shollister@lifesciencealley.org</p> <p>Larry Kuusisto Alley Institute O 952.46.817 E: lkuusisto@alleyinstitute.org</p>
Northeast (NE)	<p><i>sanofi-aventis Northeast Regional BioGENEius Challenge</i></p> <p><i>March 21, 2009</i> <i>Saturday</i> <i>West Long Branch, NJ</i></p>	Connecticut, Delaware, District of Columbia, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, Virginia, and West Virginia.	<p>PRIMARY CONTACT: Michael A. Palladino, Ph.D. Dean, School of Science Technology and Engineering Monmouth University 400 Cedar Avenue West Long Branch, NJ 07764 O: 732.263.5543 E: mpalladi@monmouth.edu</p>
Northwest (NW)	<p><i>sanofi-aventis Northwest Regional BioGENEius Challenge</i></p> <p><i>March 21, 2009</i> <i>Saturday</i> <i>Seattle, WA</i></p>	Alaska, Idaho, Montana, Oregon, Washington, and Wyoming.	<p>PRIMARY CONTACT: Evelyn Laminack Northwest Association for Biomedical Research (NWABR) O 206-957-3337 E: elaminack@nwabr.org</p>

Region	Regional Challenge	This region includes the following states:	Regional Coordinator(s):
<i>South Central (SC)</i>	<i>sanofi-aventis South Central Regional BioGENEius Challenge</i> <i>April 17, 2009</i> <i>Friday</i> <i>Austin, TX</i>	Arkansas, Colorado, New Mexico, Oklahoma, and Texas.	PRIMARY CONTACT: Steven Spurlock HS Project Coordinator Biotechnology Program Austin Community College O: 512-223-5915 E: sspulock@austincc.edu
<i>Southeast (SE)</i>	<i>sanofi-aventis Southeast Regional BioGENEius Challenge</i> <i>April, 20, 2009</i> <i>Monday</i> <i>Atlanta, GA</i>	Alabama, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, and Tennessee.	PRIMARY CONTACT: Maria Thacker Marketing Director Georgia Bio O 404.920.2042 E: maria.thacker@gabio.org Cinda Herndon-King Senior Consultant Georgia Bio P: 678-634-5329 E: cinda.king@gabio.org
<i>Southwest (SW)</i>	<i>sanofi-aventis Southwest Regional BioGENEius Challenge</i> <i>April 16, 2009</i> <i>Thursday</i> <i>San Francisco, CA</i>	Arizona, California, Hawaii, Nevada, and Utah.	PRIMARY CONTACT: Matthew Gardner Executive Director BayBio/BayBio Institute O: 650.871.7101 E: mgardner@baybio.org

PART I: STUDENT INFORMATION

Complete all sections. Do not use abbreviations. Be sure to provide the postal code and current email address

Proposal ID: _____
(Full name (First Last) of Student / Full name of School)

Last Name: _____ First Name: _____

Gender: _____ Age: _____ Social Security Number: _____

Home Address: _____

City: _____ State/Province: _____ Postal Code: _____

Home phone: _____ Fax: _____

Email: _____

Year in School (9-12): _____

Biology course currently taking/taken: _____

Science courses taken: _____

For student (if 18 or older) signature:

I hereby declare that all work presented in this project is my own and not that of a mentor, supervising teacher or any other individual. It is, to the best of my knowledge, complete, correct and original work. I have read and understand the ethics statement.

_____ Date: _____
Student's signature

For guardian (if student is under 18) signature:

I hereby declare that all work presented in this project is the student's named in Part I and not that of a mentor, supervising teacher or any other individual. It is, to the best of my knowledge, complete, correct and original work. I have read and understand the ethics statement.

_____ Date: _____
Guardian's signature

PART II: SCHOOL INFORMATION

Complete all sections. Do not use abbreviations. Be sure to provide the postal code.

School Name: _____

Address: _____

City: _____ State/Province: _____ Postal Code: _____

Home phone: _____ Fax: _____

Supervising Teacher: (Mr. / Ms. / Mrs. / Dr. /)

Last Name: _____ First Name _____

Phone: _____ E-mail: _____

Contact phone number other than School phone (*optional*): _____

For Supervising Teacher's signature:

I understand that my responsibilities include the supervision of this student(s), the liaison between the student, the school, the sanofi-aventis _____ (Specify MW, NE, NW, SC, SE, or SW) Regional BioGENEius Challenge, if selected, the sanofi-aventis International BioGENEius Challenge, and the liaison between the student(s) and the mentor, if applicable.

_____ Date: _____
Supervising Teacher Signature

Principal: (Mr. / Ms. / Mrs. / Dr.)

Last Name: _____ First Name _____

Phone: _____ E-mail: _____

For Principal's signature:

I hereby acknowledge that the student named in Part I and the above-named supervising teacher have the permission of this school to participate in this year's sanofi-aventis _____ (Select one MW, NE, NW, SC, SE, or SW) Regional and, if selected, the sanofi-aventis International BioGENEius Challenge.

_____ Date _____
Principal

Head of Science: (Mr. / Ms. / Mrs. / Dr.)

Last Name: _____ First Name _____

Phone: _____ E-mail: _____

PART IIIA: THE RESEARCH PROJECT DESCRIPTION

- *Maximum of FOUR pages (additional pages for the description, other than the Appendices pages, will be discarded and not evaluated).*
- *Use Times or Time New Roman, font size: 11 point*
- *Use the following section headings and fill in accordingly.*
- *Use clear, concise English in describing the purpose of the project and various sections, and use bullet points or summary tables where appropriate. Avoid technical jargon and long, descriptive narratives.*

Proposal ID: _____
(Full name of Student / Full name of School)

Proposal Title: (No more than 25 words)

Proposal Keywords:

Use **THREE** keywords (e.g. UV Radiation, DNA fingerprinting, and mutation)

_____, _____, _____

Abstract: In no more than 5 lines of statements summarize your project.

Objective: Describe what you did and what question(s) you asked.

Introduction: Describe the background information on which you have formulated your question(s).

Experimental Design: Outline your approach to these questions by describing the scientific experiment carried out in this project.

Results and Interpretation: Describe what the experimental results were and how you interpreted them. Did these results answer your posed question(s)? **Please include raw data in results.**

Relevant Application: Does your project have any applications in biotechnology?

PART IIIB: PROJECT APPENDICES

- *The following section is required to be filled out and submitted as the appendix pages,*
- *Limited TWO pages.*
- *Use Time or Times New Roman, font size: 11 point*
- *Use the same font and font size as designated in Part IIIA.*

Proposal ID: _____
(Full name of Student / Full name of School)

Materials and Methods: *In this section you should describe briefly the experimental procedures carried out in your project. Indicate what materials and reagents were needed and what instruments and equipment were required for the experiment. Indicate clearly what was available at your school and what was not.*

Timeline: *Submit a timeline showing the various stages of your project.*

PART IIIC: REFERENCES

- *Part IIIC is required to be submitted as the bibliography. Use standard MLA/APA format*
- *Use at least 3 non-internet sources. Journal articles published online and in hardcopy may be used as non-internet source. For each source indicate in one sentence how the source was used as a part of your project. All sources must be credible.*
- *Use Time or Times New Roman, font size: 11 point*
- *Use the same font and font size as designated in Part IIIA.*
- *A submission may be disqualified if this form is not completed and included in the application*

PART IIID: LABORATORY NOTEBOOK

- *Part IIID is required to be submitted in the form of a laboratory notebook.*
- *A copy may be made for submission*
***an electronic copy may be scanned and submitted via CD or USB drive*
- *All pages must be included*
- *Pages must be numbered, consecutive pages*
- *Notebook should be written in pen*
- *If errors are made cross out the information, date, sign and note the error*
- *All entries should be dated and initialled*
- *Notebook should include raw data*

PART IV: RESEARCH SETTING AND ADULT SUPERVISION FORM

- *This form must be completed by the adult supervising the student research regardless of the laboratory setting (regulated research institute, industry, home, school, or field).*
- *This form must be completed after the student research is complete*
- *A submission may be disqualified if this form is not completed and included in the application*

Proposal ID: _____
(Full name (First Last) of Student / Full name of School)

Student's Name: _____

To be completed by the supervising adult (NOT the student) after experimentation is complete.

1) The student used the following facility under my supervision: _____

2) I provided supervision at the facility to the student: (circle all that apply)
a) to use the equipment b) to perform experiment(s)/conduct research c) other (explain)

3) How did the student get the idea for her/his project?
(e.g. Was the project assigned, picked from a list, an original student idea, etc.)

4) Were you made aware of the project guidelines before experimentation? Yes No

5) Did the student work on the project as part of a research group? Yes No
If yes, how large was the group and what kind of research group was it (students, group of adult researchers, etc.) and what was the student's contribution in the group work?

6) What specific procedures or equipment did the student actually use and how independently did the student work?
Please list and describe. (Do not list procedures student **only** observed.)

For Adult Supervisor's signature:

I have reviewed with the student named in Part I the above information (Part IIIB), as well as the enclosed project description (Part IIIA) and to the best of my knowledge is it complete, correct and original work by that student.

As the supervising teacher/mentor for this student, I have acted as a mentor and guide only; the work presented in this project is that of the student's and not my own or to my knowledge any other individual's.

Full Name (Printed) Signature Date signed

Institution Title

Address Email Phone

PART V: DECLARATION, DISCHARGE AND RELEASE OF INFORMATION

Please read the following sections and sign in the appropriate box. This part (Part IV, 2 pages) must be returned together with the application package. Without this part, the application package is incomplete and will not be evaluated.

For students under 18 years of age – Please read Sections **A**, **B**, and **D** and ask your parent / guardian to sign in the appropriate box on your behalf.

For students 18 years of age or older – Please read Sections **A**, **C**, and **D** and sign in the appropriate box.

Section A. Please strictly adhere to all requirements and conditions within this package. All projects must comply. Projects failing to do so may be subject to sanctions, which may include disqualification.

Section B. Participants (under 18 years of age) - Authorization, release, and indemnification

If selected as a state finalist, permission is hereby given for my son/daughter/ward to travel to and participate in the upcoming sanofi-aventis _____ (Specify MW NE, NW, SC, SE, or SW) Regional BioGENEius Challenge and, if selected as a regional finalist, the sanofi-aventis International BioGENEius Challenge. I hereby release and forever discharge the members of the Organizing/Management Committee and all their agents, officers and employees from all manner of legal actions, claims or demands which may arise from or be caused by attendance of the child at the either or both BioGENEius competitions. I further agree that should the child be the cause of any damage, loss or injury to another person, or prejudice to any organization while attending the either or both BioGENEius competitions, I will indemnify the members of the Organizing/Management Committee and all their agents. I also understand that the child will be disqualified and sent home immediately, at my expense, if he/she does not behave as expected with due respect for the rights, health, and safety of other participants and the general public, or if he/she behaves in an offensive manner.

Section C. Participants (18 years of age or older) - Declaration, release and indemnification

I hereby release and forever discharge the members of the Organizing/Management Committee and all their agents, officers and employees from all manner of legal actions, claims or demands which may arise from or be caused by reason of my attendance at the any BioGENEius competition. I further agree that should I be the cause of any damage, loss or injury to another person, or prejudice to any organization while attending any BioGENEius competition, I will indemnify the members of the Organizing/Management Committee and all their agents. I also understand that I will be disqualified and sent home immediately, at my expense, if I do not behave with due respect for the rights, health, and safety of other participants and the general public, or if I behave in an offensive manner.

Section D. Release of information

Pursuant to matters of freedom of information and protection of privacy, I hereby give permission to the Biotechnology Institute to release my name/the name of my son/daughter/ward, his/her picture and/or other forms of electronic media, as the case may be, for publication in the media, including the World Wide Web, or to sponsors or prize donors. In compliance with the aforementioned, the Biotechnology Institute shall not release personal information to any organization other than those specified previously. Except for the Organizing/Management Committee, no one may film or photograph any project whatsoever without the express permission of the sanofi-aventis Regional or International BioGENEius Challenge participant(s).

Since pictures and films will be taken by the Biotechnology Institute during the BioGENEius competition, I hereby give them permission to use those pictures and films in whole or in part for publicity purposes in brochures, magazines, newspapers, television, the World Wide Web, etc. All said material, whether used in whole or in part remains at all times the property of the Biotechnology Institute.

Proposal ID: _____
(Full name of Student / Full name of School)

For students under 18 years of age – Sections A, B and D: Authorization, Discharge and Release of Information.

I have read the “the sanofi-aventis International BioGENEius Challenge Application Package” and my child agrees to comply with the conditions and requirements stated within. My child agrees to abide by the decisions of the Evaluation Committee, whose decisions will be final and without appeal. I relieve the Organizing/Management Committee of all responsibility concerning theft or damage to his/her material and I authorize the participation of

Full name of student

Parent/guardian signature

Date

For students 18 years of age or older – Sections A, C and D: Declaration, Discharge and Release of Information.

I have read “the sanofi-aventis International BioGENEius Challenge Application Package” and I will comply with the conditions and requirements stated within. I agree to abide by the decisions of the Evaluation Committee, whose decisions will be final and without appeal. I relieve the Organizing/Management Committee of all responsibility concerning theft or damages to my material.

Full name of student

Participant’s signature

Date

PART VI: SAMPLE PROJECT DESCRIPTION

Proposal ID: Student name / school name
Proposal Title: **The Incredible Inhibiting *Myxobacteria***
Proposal Keywords: *myxobacteria*, exoenzymes, antibacterial disinfectants

Abstract:

Objective:

The purpose of this project was to investigate the bactericidal properties of *Myxobacteria* and to attempt to isolate the exoenzymes responsible for this characteristic.

Introduction:

..... The basis of this project revolved around organisms, which exhibit highly unusual characteristics when compared to more common bacteria. These organisms are the *Myxobacteria*. The 3rd Volume of Bergey's *Manual of Systematic Bacteriology* characterizes these organisms,

..... This investigation focused upon this last property. Many *Myxobacteria* are capable of producing extracellular enzymes which hydrolyze molecules including proteins, nucleic acids, fatty acid esters, and various polysaccharides. Therefore the enzyme produced could prove to be ideal for a wide variety of industrial and domestic applications such as anti-bacterial disinfectants,.....

Experimental Design:

..... The project was carried out in two stages that investigated the inhibitory properties of *Myxobacteria*. The first stage was accomplished by growing a species on dead or live cells of *Escherichia coli* using Singh plates. The second stage of this project isolated the specific exoenzyme that is responsible for the inhibitory properties of this organism.

Results and Interpretation:

..... When the enzyme was isolated, it was tested to determine its bactericidal effects and their potential use for...

Relevant Application:

..... This enzyme can be applied to many industrial and medical areas in terms of an antibacterial disinfectant, or in biotechnology as an inhibitor in selective or differential media.

APPENDICES

Materials and Methods:

- Explained in more details what he/she knew about the methods and techniques required for the proposed research work; what he/she did not know he/she would learn from the mentor
- Listed what the school had and what the student needed: chemicals; microorganisms; instruments and equipment

Timeline of project:

Submitted a timeline indicating when his/her work started, when he/she completed each stage of proposed work, and when he/she will begin their preparation for the BIOGENEIOUS competition.

Mentorship support:

Listed the supervising teacher as a mentor or an external mentor in the field of microbiology.

PART VII: STATE SELECTION JUDGING CRITERIA

(Used in selection of state finalists)

1. Scientific Merit and Creativity 50%

In this section, judges will evaluate the project's overall relevance to the field of biotechnology as well as the originality and creativity demonstrated by the student in proposing and carrying out the project. Judges must also assess the level of science represented by the project, e.g. grade level, university level, etc.

- Relevance to biotechnology 15%
- Originality and creativity 20%
- Level of Science 15%

2. Project Execution 50%

Judges should evaluate the project's design as an experiment or a demonstration of an application of biotechnology research. Also assess the scientific research skills shown by the student in carrying out the project. In the last two sections, evaluate the student's results in terms of data collection and analysis and the general validity of the conclusion reached.

- Design 15%
- Skill levels demonstrated 10%
- Results: data collection and analysis 15%
- Validity of conclusion 10%

PART VIII: REGIONAL AND INTERNATIONAL CHALLENGE JUDGING CRITERIA

(Used in all Regional Challenges and the International Challenge)

Instructions for preparing your “rollup” poster display for the Regional and International BioGENEius Challenge are available on the Biotechnology Institute

(http://biotechinstitute.org/programs/biogeneius_challenge.html)

1. Scientific Merit and Creativity

20%

In this section, judges will evaluate the project’s overall relevance to the field of biotechnology as well as the originality and creativity demonstrated by the student in proposing and carrying out the project. Judges must also assess the level of science represented by the project, e.g. grade level, university level, etc.

- Relevance to biotechnology 5%
- Originality and creativity 10%
- Level of Science 5%

2. Project Execution

35%

Judges should evaluate the project’s design as an experiment or a demonstration of an application of biotechnology research. Also assess the scientific research skills shown by the student in carrying out the project. In the last two sections, evaluate the student’s results in terms of data collection and analysis and the general validity of the conclusion reached.

- Design 10%
- Skill levels demonstrated 5%
- Results: data collection and analysis 10%
- Validity of conclusion 10%

3. Project Display

15%

Judges should evaluate the summary prepared by the student as an accurate representation of the project and its conclusions. Assess the project display in terms of its clarity and layout in illustrating the science and techniques involved in the project. Finally, provide an appraisal of the display’s success in generating interest.

- Project summary 5%
- Clarity and layout 5%
- Interest levels 5%

4. Oral Presentation

30%

The student’s oral presentation of their project’s design, objectives and conclusion is an important part of the judging process. Assess the presentation in terms of the level of scientific knowledge demonstrated, the student’s command of the scientific techniques involved and their ability to explain and defend their conclusions under questioning by the judges.

- Demonstration of scientific knowledge 10%
- Command of techniques and skills 10%
- Ability to explain and defend conclusions 10%