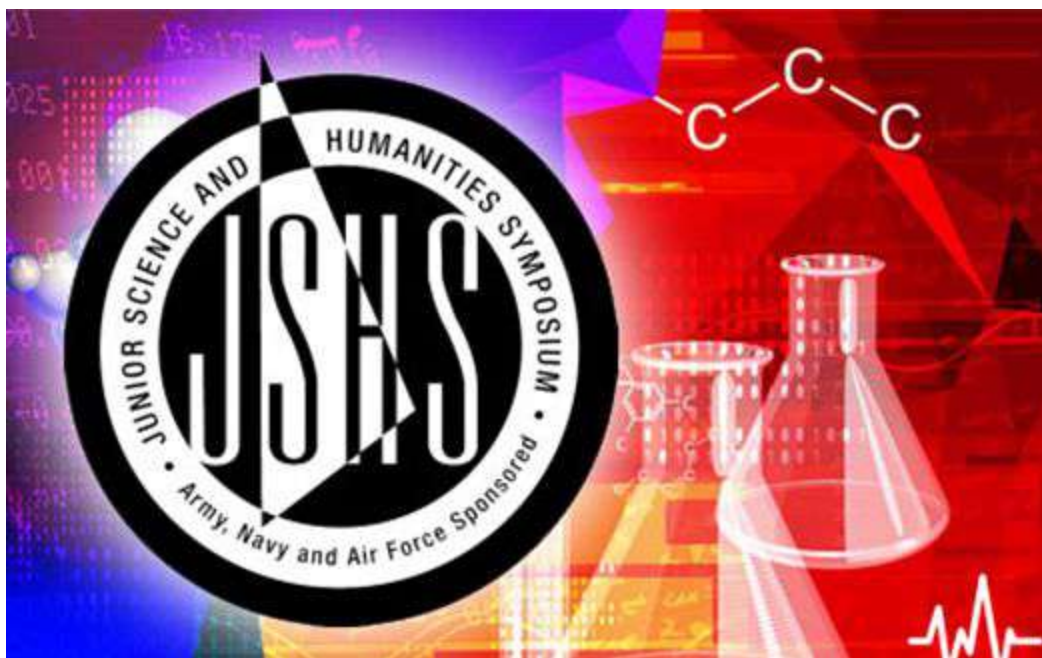


Westchester - Rockland

Junior Science and Humanities Symposium



STUDENT INFORMATION PACKET 2019 - 2020

Welcome to Westchester-Rockland Junior Science and Humanities Symposium

The WR-JSHS is sub-regional competition for student researchers to present at three levels of participation: Senior Speaker PowerPoint, Competitive Poster, and Display Poster. Please use this booklet to prepare and apply for this exciting competition.

Registration Eligibility & General Information

1) Original research required for WR-JSHS

- **Senior Speaker PowerPoint and Competitive Poster Presenters must present original student work w/ JSHS certifications.**
- Presenting data that a mentor collected and analyzed will result in disqualification.
- Students are permitted to design and present projects that utilize data from public and/or privately collected databases/data sets. However, the question, analysis, and conclusions must be the work of the student rather than a summation and analysis of already published data.
- Meta-analysis and Review Papers are not permitted. Meta-analysis projects, the examination of data from a number of independent published studies of the same subject, in order to determine overall trends, will not be considered by the committee.
- If a student does not have data and analysis, he or she may enter as a display poster.

2) Certification Requirements

- **Certifications are required for both the speaker and competitive poster competitions.**
- **Only JSHS certification forms will be accepted for WR-JSHS:**
 - **Student certification: completed and hand signed by student**
 - **Scientist Certification:** The scientist MUST provide a HAND-WRITTEN signature on the scientist certification-this an Upstate JSHS requirement
 - **JSHS Teacher Certification**
- The certifications should be included as the last three pages of the research paper.
- Keep a copy of everything you send, including certifications.
- The certification forms are available here: <http://www.albany.edu/jshs/index.shtml>

Requirements for Speaker Presenters (seniors only):

Place the following in a manila folder labeled with the student's full name:

- ☐ **\$40.00 Non-Refundable check (or school check/PO)**
- ☐ **1 JSHS formatted abstract (See APPENDIX C)**
- ☐ **1 de-identified abstract-include title and student name in heading ONLY**
- ☐ **1 copy of the paper**, formatted for JSHS and **including student, scientist and teacher certifications**, bound with a staple in the upper left corner.
- ☐ **Please review paper requirements, on page 4, carefully**
 - o This is the paper that will be used to qualify for speaker selection for WR-JSHS
 - o If a student wins in the speaker category and moves onto the state level as either a speaker (placed 1st or 2nd in room, or a poster, placed 3rd or 4th in a room) this paper will be sent to Albany for the judges to review.
- Most papers will be at least 10 pages and contain at least 10 works cited.
- **There is a 20 page maximum for all papers.** *Do not count: Title page, Acknowledgement of major assistance, Table of Contents, Certifications, Lists of Figures, References or Citations. See **page 4** for detailed information on paper requirements.*
- Here is the link to info about paper format and submission: <http://www.albany.edu/jshs/> - **you do NOT need to bind it in a plastic cover**—please use one staple-upper left corner. Also see info on **pg 4** of this packet.

If a student qualifies for but is not selected for the speaker competition, he/she will be placed into the competitive poster competition. For students placed into the competitive poster category, only trifold cardboard posters will be permitted. Maximum size is 48" x 48" with an additional 10" in header.

Incomplete or improperly formatted papers will not be considered and will result in disqualification from the speaker category. Student will be moved into the competitive poster or display sessions.

Requirements for the Competitive Poster Presenters

Place the following in a manila folder labeled with the student's full name:

- ☐ \$40.00 non-refundable check (or school check/PO)
- ☐ **1 copy of the paper**, formatted for JSHS and **including student, scientist and teacher certifications**, bound with a staple in the upper left corner.
- ☐ Most papers will be at least 10 pages and contain at least 10 works cited.
- ☐ **There is a 20 page maximum for all papers.** *Do not count: Title page, Acknowledgement of major assistance, Table of Contents, Certifications, Lists of Figures, References or Citations. See **page 4** for detailed information on paper requirements.*
- ☐ Here is the link to info about paper format and submission: <http://www.albany.edu/jshs/> - you do **NOT** need to bind it in a plastic cover—please use one staple-upper left corner. Also see info on **pg 4** of this packet.
- ☐ **Only trifold cardboard posters** will be permitted. Maximum size is **48" x 48" with an additional 10" header.**

Requirements for Display Poster Presenters

- ☐ \$10.00 display poster fee
- ☐ Day of symposium-bring a cardboard poster: Only trifold cardboard posters will be permitted. Maximum size is **48" x 48" with an additional 10" header.**

WR-JSHS Paper Requirements - Speaker and Competitive Poster

Student research should be original, if not completely unique. It must report findings not previously cited in scientific literature. It is important that you follow the format and content guidelines below.

Format

- 8 ½" X 11" white paper.
- One inch margins all around
- Double Spaced
- 20 page limit (In counting pages, count: Abstract, Review of Literature, Statement of Purpose, Methods and Materials, Results, Discussion, Conclusions and Significance of Findings and any graphs or charts. Do not count Title page, Acknowledgement of major assistance, Table of Contents, Certifications, Lists of Figures, References or Citations.)
- Most papers will have a minimum of 10 pages with 10 citations from primary sources
- Times New Roman 12-point font, laser printed or typed.
- Each page must include a header with only your last name and page number.
- **Submit one copy** of your research paper bound with a single staple in the upper left corner.

**** Inaccurate or incomplete submissions will not be considered***

Paper Content

Cover Page	Your Name, School Name, and Project Title
Acknowledgments	Acknowledge the assistance of mentors, institutions & teachers
Table of Contents	Organized by topics and sub-topics: include the page numbers on which each begins.
List of Figures & Tables	
Abstract Paragraph	THIS IS PAGE 1 (do not put a number on the previous pages). This is not the abstract form.
Introduction	Background and Review of Literature
Statement of Purpose	
Methods & Materials	
Results	Data/Findings
Discussion / Conclusion	
References	References must be cited at least once in the paper and listed at the end of the paper. Citations (footnotes, endnotes) are required for important statements of facts or opinions taken from written sources. Each citation to a reference should be given in the body of the text in the style of scientific journal articles. A minimum of 10 significant citations is expected.
Certifications	All certifications (Scientist, Teacher, Mentor) must be included with the paper! The scientist MUST provide a <u>HAND-WRITTEN</u> signature on the scientist certification-this an Upstate JSHS requirement.

For all formatting questions please see the JSHS website for more clarification:

<https://www.albany.edu/jshs/>

Rules & Guidelines for the day of the fair (Saturday February 8, 2020):

Speaker PPT Competition Rules

- Selected speakers will be organized in Speaker Rooms based on category selection. Typically there will be 12 speakers in each room.
- Speakers will present a twelve (12) minute PowerPoint presentation.
- Speakers must bring a copy of their PowerPoint presentation on flash drive – Windows compatible and in PowerPoint. (**Google slides and other formats are not acceptable**)
- Speakers should upload the presentation to an electronic drop box or send to an email as back-up.
- Students arriving on the day of the competition without a PowerPoint presentation will be disqualified.
- PPT must not contain mentor name/institution name / teacher name/ school name
- Refer to the rubric when designing your PPT. (**SEE APPENDIX A**)

Speakers should be prepared for:

- You will present to a panel of judges with expertise in your field.
- There will be a teacher moderator to keep track of time and manage the Q and A session.
- You will be given 12 minutes of uninterrupted time. When there is 1 minute left the moderator will indicate the time remaining.
- Following the presentation, there will be 5 minutes of questions from the judges (Q & A).
- The presenter is expected to repeat the judges question before answering the question.
- No NEW slides may be used during the Q&A but the speaker may return to a previous slide.
- Questions from the audience (other than judges) will not be permitted.

Awards & Qualification for Upstate JSHS

WR-JSHS Award	Upstate JSHS qualification
1st & 2nd Place (In a typical room of 12 presenters)	Qualify to compete in the PPT Speaker competition in Upstate JSHS at SUNY Albany. This is the qualifying competition for National JSHS. Please refer the Upstate JSHS website for specific speaker guidelines for the Upstate competition.
3rd & 4th Place (In a typical room of 12 presenters)	Qualify to compete in the POSTER competition in Upstate JSHS at SUNY Albany. Upstate poster competitors are not eligible to advance to the National JSHS, but can win awards in the poster category. At Upstate JSHS: <ul style="list-style-type: none">• Poster board dimensions are 36" high x 48" wide• Header boards are allowed and must be no larger than 10" high x 36" wide. The Header board should only contain a title.• Posters should be readable from a distance of 4 feet• Cardboard only - Wooden boards are not permitted for competition.
5th Place	Alternative to participate in Upstate JSHS

NOTE: Within 72 hours after placing at a sub-regional symposium, presenters must submit the following to the Upstate NY JSHS Coordinator via email (jshs@albany.edu). Failure to do so will result in an alternate chosen instead. Please refer to the [Upstate JSHS](#) website for official rules.

- JSHS Research abstracts formatted as a Microsoft Word .doc
- Research papers in .pdf format (note: research papers will NOT be accepted without student, teacher, and scientist mentor certifications).

Competitive Poster Competition Rules and Guidelines

Students selected to present in competitive poster should create a poster that meets the following requirements.

- ☐ **Only trifold cardboard posters** will be permitted. Maximum size is 48" x 48" with an additional 10" header.
- ☐ Prepare a 5 minute presentation of your work
- ☐ Be prepared for 2 minutes of Q&A from the judge
- ☐ Refer to the rubric when designing your poster. (See APPENDIX B)
- ☐ Students who compete as **Competitive Posters at WR-JSHS** may earn local awards in the competitive poster category but **are not eligible to qualify for the Upstate JSHS competition at SUNY Albany.**

Display Poster Session Rules and Guidelines

Display Posters are not competing, but have the chance to display posters and discuss the research. There is an award for the most promising display poster project.

- ☐ **Only trifold cardboard posters** will be permitted. Maximum size is 48" x 48" with a 10" header.
- ☐ Prepare a 5-6 minute presentation of your work.
- ☐ Judges will be seniors from other schools.
- ☐ Any student who intends to present a Display poster at WR-JSHS should have already registered at the October 25th registration deadline. Any student who has not pre-registered will not be permitted to participate as a display poster presenter.

Tentative Schedule for Feb. 8, 2020 WR-JSHS

8:00 AM – 4:30 PM

John Jay High School, Cross River, NY

8:00 AM – 8:30 AM School and Teacher Registration – John Jay Hallway

(near main entrance)

- Students should set up poster/upload ppt presentations immediately following registration
- Light breakfast will be provided for students near cafeteria

8:30 AM – 8:45 AM

Welcome and Instructions for student Poster presenters - Cafeteria

Welcome and Instructions for senior Speaker presenters - Auditorium

Moderator Meeting – Room C-102

Speaker Judges Registration - Room C-113

Poster Judge Orientation Meeting - Room C-108

8:50 AM – 9:15 AM Speaker Judge Orientation Meeting - Room C-113

A light breakfast & coffee/tea will be provided for teachers and judges outside room C-113

Competitive Poster Sessions

9:00 AM – 12:45 PM

Session 1 Cafeteria/Cafeteria Lobby

Session 2 Library/Library Lobby/N Classrooms

Speaker Sessions

9:30 AM – 1:30 PM

Student Speaker Presentations (concurrent sessions, rooms TBA)

Students may only move/change rooms at a break.

Lunch

12:50 PM – 2:00 PM

Cafeteria (Lunch will be available for purchase in the cafeteria)

Display Poster Session

1 PM - 2:45 PM

Display Posters in library/library lobby

Awards Ceremony

3:30 - 4:30 PM Auditorium

Awards ceremony will be limited to students who competed and their teachers.

Observers, including parents will be seated only after competitors have been seated.

WR-JSHS Speaker Session Score Sheet

Judge Name _____

Presenter _____

Category Criteria	Maximum Score	Score
Review of Literature <ul style="list-style-type: none"> Background information clear and logical Demonstrates that project is based on prior research Organized in chronological or logical order leading to purpose or rationale 	15	
Statement of Purpose/Hypothesis <ul style="list-style-type: none"> Demonstrates originality in addressing purpose Purpose addresses gap in field/area of research Clearly identifies the hypothesis Statements are clear, concise and thorough 	10	
Methods and Materials <ul style="list-style-type: none"> Demonstrates that student was involved in experimental design Methods are demonstrated effectively through diagrams of flow charts Student demonstrates understanding of experimental design Identifies variables and controls A reproducible protocol is described 	15	
Results, Analysis and Discussion <ul style="list-style-type: none"> Sufficient data presented to address purpose Data and/or observations are clearly presented in labeled tables, graphs, photos, etc. Student demonstrates understanding of results and how the results inform/address the purpose Explanation of results are scientifically sound, logical and well supported by data presented Appropriate statistical analysis applied, student demonstrates understanding of stats Student understands significance and limitations of results/experiment/experimental design 	25	
Conclusions <ul style="list-style-type: none"> Findings are significant and have real world applications Clear, concise statement of findings that are supported by results Conclusions relate to hypothesis or statement of purpose Student discusses and understand significance Student identifies areas for further research based on conclusions 	15	
Quality of Oral Presentations <ul style="list-style-type: none"> Student demonstrates command of his/her work Student demonstrates deep understanding of her/her work Student shows ability to handle questions 	10	
Acknowledgement of Major Assistance <ul style="list-style-type: none"> Acknowledges all direct assistance Acknowledges assistance in selecting topic, planning course of research and gathering data 	10	
Total	100	

WR-JSHS Poster Session Score Sheet

Category Criteria	Max Pts	
Review of Literature <ul style="list-style-type: none"> Background information clear and logical Demonstrates that project is based on prior research Organized in chronological or logical order leading to purpose or rationale 	10	
Statement of Purpose/Hypothesis <ul style="list-style-type: none"> Purpose addresses gap in field/area of research Clearly identifies the hypothesis Statements are clear, concise and thorough 	10	
Methods and Materials <ul style="list-style-type: none"> Methods are demonstrated effectively through diagrams of flow charts Student demonstrates understanding of experimental design Identifies variables and controls A reproducible protocol is described 	20	
Results <ul style="list-style-type: none"> Sufficient data presented to address purpose Data and/or observations are clearly presented in labeled tables, graphs, photos, etc. 	20	
Analysis and Discussion <ul style="list-style-type: none"> Student demonstrates understanding of results and how the results inform/address the purpose Graphs, tables, photos, etc. are clearly explained Explanations are scientifically sound, logical and well supported by data presented Appropriate statistical analysis applied, student demonstrates understanding of stats Student understands limitations of results/experiment 	20	
Conclusions <ul style="list-style-type: none"> Clear, concise statement of results Conclusions relate to hypothesis or statement of purpose 	10	
Oral Presentations (5 minutes to present, 2 minutes for questions and answers) <ul style="list-style-type: none"> Student demonstrates command of his/her work Student gives a concise and organized overview Student shows ability to handle questions 	10	
Total	100	

Preparing Your Abstract Form (Senior PPT Speakers ONLY)

The format for the 250 word abstract includes: 1 inch margins, 12 point font (Times New Roman), with justified alignment. Abstracts must be adequate in length but not exceed these specifications.

The header preceding the abstract body must include:

- **Title of the research (bolded and properly capitalized)**
- Authors' Name(s)
- High School, High School City, High School State
- Name of Teacher/Mentor/Sponsor and his/her Affiliation.
Precede the individual's name with a title (i.e., Teacher, Mentor, Sponsor)
- Include one line of space between the heading and the abstract body

Please carefully proofread your submission. Abstracts will not be retyped or edited. Each of the speaker judges will receive a copy of the abstract form. The abstract should accurately convey the essential nature of the research conducted and the most significant conclusions reached. A further purpose of the abstract is to attract the interest and curiosity of the non-specialist reader and thus encourage exchange, discussion, and elaboration between various authors and between authors and readers.

Content

- What you did, how you did it, what it means, why you did it and what you found.
- Citing of experimentation completed by submission date.
(*Anticipated* experimentation or results *should not* be included.)
- Diagrams, if used, must be drawn in black ink.
- Reference to a specific procedure should be restricted to a description of the process employed.
- State results, conclusions or findings clearly and concisely.
- Credit any financial sponsorship at the end of the abstract: "Research supported by ..."

SAMPLE**Genetic Transformation of Sweet Potato**

Jane Einstein

Anywhere High School, Howell, NY

Teacher: Mrs. Georgiana Spallanza / Mentor(s): Mr. Joseph Pascale, Albany Medical College

Sweet potato is considered the sixth most important food crop in the world and has high nutritional value for humans. However, pests, diseases and environmental factors prevent the crop from reaching its maximum agricultural potential. Improvement of the sweet potato is highly limited by conventional breeding methods. Recombinant DNA technology offers a means for manipulation of the sweet potato genome to integrate valuable traits. Critical parameters of the electroporation (voltage of current and digestion of cell wall) and particle bombardment (helium pressure and gold particle distribution) were examined for efficient DNA transfer. Electroporation resulted in less damage and higher recovery of tissue after DNA delivery compared to particle bombardment. Transformed cells were identified with two marker genes: Beta-glucuronidase (GUS) and Green Florescent Protein (GFP). Cells expressing GFP were easily identified due to uniform protein distribution, and allow the monitoring of the cell development pattern, unlike cells expressing the GUS gene. Using the optimized conditions derived from the present study, sweet potato can be genetically improved for increased crop productivity and nutritional value.