



2020 WEF Member Association State Organizer's Handbook

★★★ USA

SIWI STOCKHOLM
JUNIOR
WATER PRIZE

 **Water Environment
Federation**
the water quality people®

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Let's Solve Water

U.S. Stockholm Junior Water Prize

WEF Member Association

State Organizer's Handbook

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Background

The Stockholm Junior Water Prize (SJWP) is the world's most prestigious youth award for a water-research science project. The prize taps into the unlimited potential of today's high school students as they seek to address our water challenges.

Created in 1997 by the Stockholm Water Foundation, the prize was established to mirror the adult Stockholm Water Prize, regarded as the equivalent of a Nobel Prize for water research. The Stockholm International Water Institute (SIWI) facilitates the international competition, which now draws participants from more than 33 countries.

In the United States, the Water Environment Federation (WEF) and its Member Associations (MAs) organize the national

competition with support from Xylem, Inc. and the Water Research Foundation (WRF). The program demonstrates WEF's and WEF MAs commitment to innovation in water science, reflects a dedication to promoting water careers, and raises awareness of global water issues.

The SJWP Sub-Committee

The U.S. SJWP program is guided by a volunteer sub-committee of the Public Communications and Outreach Committee that is made up of WEF members from across the country. WEF encourages State Organizers and other MA members to take part in this committee.

If you are interested in learning more about the committee or becoming a member, contact Brad Lovett at blovett@wef.org.



Student participants with coaches, The Ohio State University 2019. Photo Credit: Annelise Taggart

The U.S. SJWP competition brings together approximately 60+ students from across the United States, Puerto Rico, and the U.S. Virgin Islands to participate in science and water-related events, connect with other young researchers, and compete for the opportunity to represent the United States at the international competition during World Water Week in Stockholm, Sweden.

The State Organizer's Role

MAs play a vital role in the implementation and support of the U.S. SJWP program. Each MA sponsors the travel for their state winner to the national competition and appoints a designated state organizer, who helps run their state competition. This is the main point person for each state program, and if you're reading this guide, it's probably you!

Together with the WEF staff liaison and the SJWP sub-committee, the State Organizer works to promote the competition and encourage student participation. They also help facilitate the judging process and the selection of their state winner.

This handbook is designed as a how-to guide to help MAs, and specifically, State Organizers, implement and promote their state competition. It provides instructions and shares ideas and experiences from other MAs to expand recognition and development of the competition.

Recognizing that volunteers have different amounts of time and resources; the handbook attempts to provide a range of options for creating a successful program.



For more than a decade the SJWP program has helped nurture our young scientists' interest in water research. During this time, we have witnessed many exciting discoveries, which are all made possible by volunteers working on many different levels.

Making Your State Competition a Success.

State Organizer Planning Guide

More detailed information on each of these items is included in the following section.

1. Arrange for volunteers to visit local science fairs to distribute regional certificates and information about SJWP.
2. Sponsor transportation for your state winner(s) (up to two students.) to the national competition. Begin planning now to identify funds in your MA budget or to solicit sponsors. The average airfare is \$600 per person. If necessary, WEF can aid in finding local sponsors.
3. Recruit a judging panel to help review your state entries. This group will review the research papers submitted online and, if necessary, conduct student interviews. They might also attend local science fairs to award SJWP certificates or competition invitations and speak with the students.
4. Select your state winner and notify WEF no later than April 30, 2019.
5. Contact your state winner no later than May 1, to congratulate them and to let them know that an email with time-sensitive competition information will be forwarded to the student from WEF during that week.

If any of these items presents a particular hardship, WEF staff resources are available to assist you. The sooner assistance is sought, the better. Please contact Brad Lovett at blovett@wef.org or 703-684-2454.

Member Association Activities

Activity levels vary for each state competition, at a minimum, State Organizers should try to manage the four important elements listed below.

Depending on the amount of time you can dedicate to this effort, *you might want to consider recruiting other volunteers* or even establishing committees to facilitate certain portions, such as fundraising. This can help take the burden off one person and allows other MA members to get involved in this exciting program.

1. Sponsor Student Travel

If you haven't already factored this into your MA's annual budget, now is the time to start soliciting funds to provide travel for your state SJWP winner(s) to the national competition. In today's market, airfare can be unpredictable.

To cover this expense, many MAs hold fundraisers throughout the year to help support their SJWP program. This can provide an opportunity for MA members to interact, as well as raise awareness of the MA and the competition in your community.

WEF MA's are not responsible for funding expensed for parents, guests, or chaperones. If parents, guests, or chaperones choose to accompany a student, it will be at their own expense, unless the MA wishes to fund them.

Additional sponsorship may be as close as your own workplace. Consider soliciting funds from local businesses, consulting firms, or other water-related organizations. Some MAs have even approached corporations like Wal-Mart, Target, etc.

And don't forget the national sponsor Xylem, Inc., the international and U.S. sponsor, encourages all its representatives to support SJWP at the local level. Bottling companies (such as Coca-Cola) also have a network of local bottlers who may be able to help support your competition. *Think about which companies rely on water for their products.*

In return for sponsorship, you can recognize the support of your sponsors in press releases announcing your state winner, web announcements, and newsletter articles. Wording should show the support structure and relationships, such as:

The [Your MA's Name Here] sponsors the [Your State] state SJWP competition with generous support from [Sponsor Organization].

If you have questions on how to start fundraising, contact Brad Lovett at blovett@wef.org.

Many MAs take unique approaches to funding their SJWP competition expenses. Here are some examples of successful approaches that have been used in the past:

- The Rocky Mountain Water Environment Association has raised more than \$2,500 each year through its "Strikes and Spares for Science Fairs" bowling fundraiser. (See photo below.)
- The New England Water Environment Association has offset expenses by raffling off a popular live educational program, to be performed at the school of the winner's choice.
- Be creative! For a list of fundraising ideas, visit the State Organizer Materials page at www.sjwp.org.



2. Recruit State Judging Panel

Each State Organizer should form a judging panel to help select their SJWP state winner. The judging panel should represent different scientific disciplines to ensure an equal review of all projects. This is an excellent opportunity for MAs to reach out to members of the academic community.

When possible, judges or volunteers should visit local science fairs to help award SJWP Regional Certificates. Three certificates are sent by WEF to both SJWP State Organizers and all ISEF Science Fair Directors (regional and state fairs). If MA members are available to judge at a fair, the State Organizer should coordinate with the Fair Director to let them know that an MA representative can award the certificates. For a list of fair directors, visit <https://apps2.societyforscience.org/StudentScience/Student/FindAFair>

When presenting the certificates, remember to highly encourage students to enter their research papers online at www.SJWP.org by April 15 to be eligible to compete in the SJWP state competition. Multiple certificates may, and should, be awarded at each fair. If your MA needs additional certificates, email blovett@wef.org. ***Please make sure that the folder is presented with the certificates, as it has important detailed instructions for the students.*** Students may self-nominate and do not need to be a part of an organized science fair to enter the competition; therefore, a state winner cannot be declared at a science fair until all papers submitted online have been fairly judged.

At a minimum, the judging panel should be prepared to review all state entries that are received online. State Organizers will be sent these entries shortly after April 15. Each entry consists of student/teacher contact information and a research paper. Judging criteria is available to help evaluate these entries (see page 13). For more information on the judging process, see page 9. ***Please remember that a state winner cannot be declared until all papers submitted online have been fairly judged.***

3. Report Your State Winner

It is essential that your state SJWP winner's name and project title be reported to WEF at blovett@wef.org, no later than April 30, 2019. This gives WEF two business days to prepare the website announcement for May 3, as scheduled. Students, teachers, and parents will be visiting the website hoping to see a name they recognize.

4. Contact Your State Winner

Next, State Organizers should contact their state winner(s) to congratulate them and confirm the student(s) ability to travel to the national competition. (If for any reason the student cannot attend, the prize will be awarded to the second-place winner; please notify WEF immediately of any changes.) Inform the student(s) that during the first week of May they will receive a time-sensitive email from WEF that includes paper guidelines, competition details, and insurance papers that need to be signed by their guardian and returned to WEF immediately. It will also include detailed instructions for contacting the travel agency to make flight arrangements. Teachers should be notified that their student won the state competition.

There is an extremely short turn-around period for students to return all forms and make travel arrangements; therefore, please be prompt in notifying your winner.

MA's may also choose to handle the student travel themselves, as opposed to going through the WEF travel agency. If your MA chooses this route, please notify the national organizer by email prior to April 1st.

Assure the students that greeters representing WEF will be at the airport to meet them. In addition, each student will be assigned to a team with a water professional coach to help make their experience a successful one.

Optional: Arrange MA Award Presentation

Shortly after the winner's announcement, each MA will receive a certificate for presentation at their winner's school. This helps promote the student's achievement and presents a photo opportunity that is likely of interest to the local press.



KY/TN WEA volunteers honor their state winners with an awards presentation, which can be a great photo and press opportunity for their local MA.

When contacting the science teacher to announce their student is the state winner, you may want to arrange a time to present the certificate. If a representative from the MA cannot award the certificate in person, find out to whom the certificate should be sent for presentation to the student. It is important that the presentation is made before the end of the school year and prior to the student leaving for the national competition because it will be more newsworthy to local press.

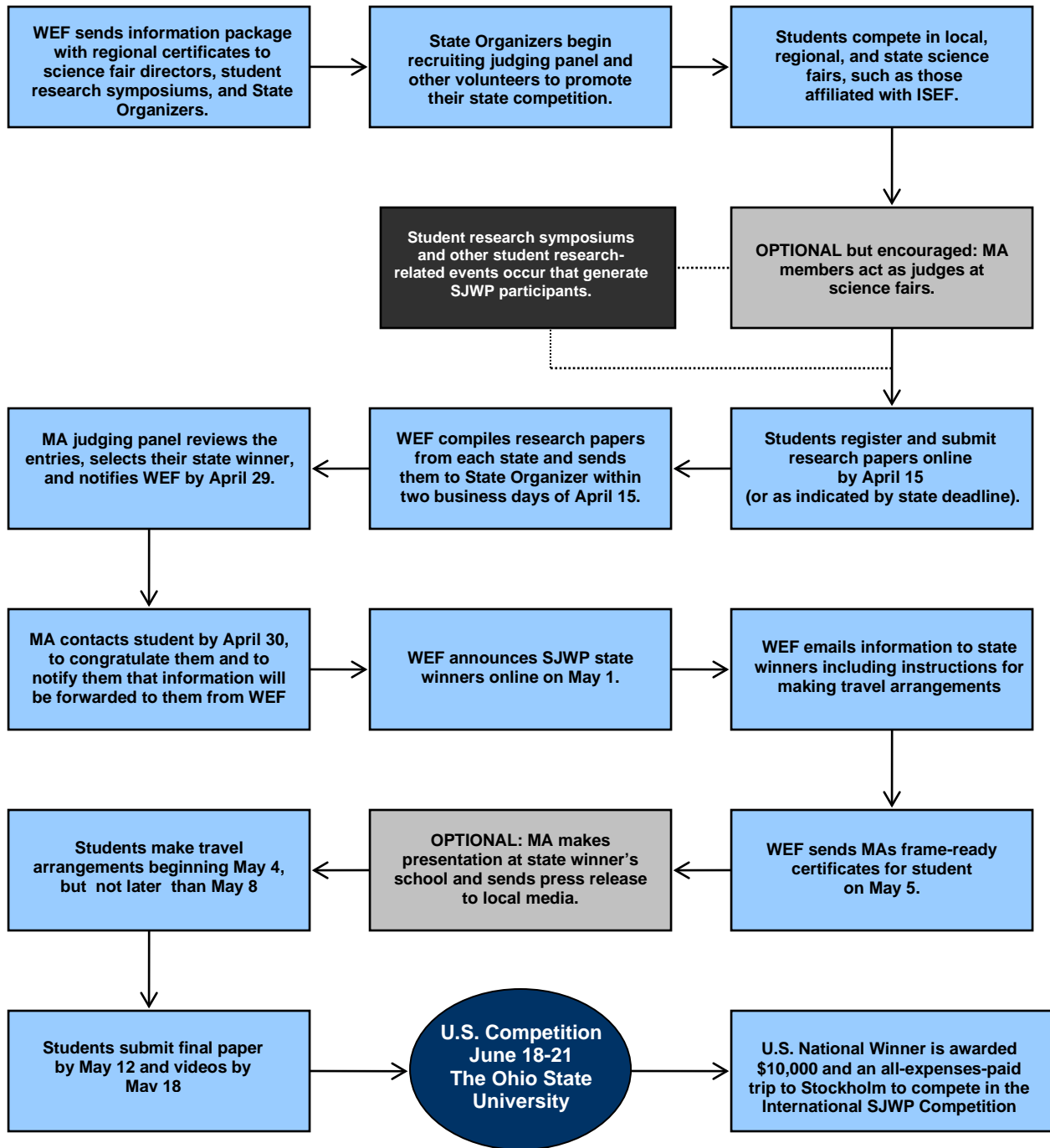
A sample press release that can be modified and sent to local reporters is included (see page 14). This is highly recommended as an avenue of promotion of the SJWP.

Promotional Opportunities

Take advantage of opportunities to promote your SJWP competition. It not only gives your MA recognition, but it draws more students into the water sector. Here are some suggestions that other MAs have used that you can implement in your area.

1. Send promotional flyers to local high school science teachers to display in their classrooms. For flyers, email blovett@wef.org.
2. Sponsor an ad in a local publication. WEF has generic ads that you can customize with your MA logo and send to publications. Request an ad by emailing blovett@wef.org.
3. Attend local science fairs and pass out literature to students with water-related projects. This can be done as the judging is taking place—whether students are present or not. Many fairs, such as those affiliated with ISEF can be located online at http://apps.societyforscience.org/find_a_fair/. MA specific flyers can be provided by contacting blovett@wef.org.
4. Set up a booth at a local science teacher's conference or your annual MA meeting to distribute literature about the competition or other educational materials. Getting the word out about the prize is an important step in encouraging student participation. (materials can be provided by contacting blovett@wef.org)
5. Invite your state winner to your association's annual conference and allow them to display their research or speak to members. MAs can host a reception where the student is the guest of honor. This can be a wonderful mentoring tool that gives the student a chance to interact with water quality professionals.
6. Highlight accomplishments of winning students by featuring them in your association newsletter or your MA web page. The more recognition that is given to a student, the more the prize is promoted throughout the association and the general public.

U.S. SJWP Competition Process



Information Regarding the Four Levels of SJWP Competition

Regional Competition

Eligibility and Entry

All high school students who have reached the age of 15 by August 1 of the competition year, and in grades 9 through 12 with water-related science projects are eligible to participate in the regional SJWP competition. It is not necessary for a student to be affiliated with a science fair in order to enter the competition; students may also self-nominate/enter.

Judging

Regional SJWP certificates have been sent to all International Science and Engineering Fair (ISEF) directors (a network of 550 science fairs), several student research symposiums, and State Organizers. These certificates serve two purposes: 1. to award water research projects, and 2. to encourage students to enter your SJWP state competition.

At many fairs, directors are overwhelmed with judging and need additional support to properly present awards. In the case of SJWP, water projects can span many categories, such as biology, chemistry, and environmental science. In order to ensure that the best water projects are awarded, it helps to have the expertise of a water quality professional, such as a member of your MA.

If MA members are available to help judge at a fair, the State Organizers should coordinate with the Fair Director to let them know that an MA representative can award the certificates. Dates and times of many regional and state science fairs for your state or region can be found online, such as those affiliated with ISEF

<https://apps2.societyforscience.org/ssp-affiliate-fair/>

When presenting the regional certificates, **remember to encourage students to enter their research papers online at www.SJWP.org** by April 15 to be eligible to compete in the state SJWP competition. Multiple certificates may be awarded at each fair. If your MA needs additional certificates, please send an email to blovett@wef.org.

There are also junior-level certificates available for download at www.sjwp.org if you choose to award middle school or 8th-grade projects. This helps engage students in water science at an earlier age. These special certificates can be downloaded at www.sjwp.org, under the State Organizer Materials section. *Please note that students receiving the Jr. Scientist certificates are not eligible for entry into the SJWP competition.*



The 2015 national competition winner, Perry Alagappan of Texas, represented the United States by presenting his research at the international competition in Sweden. Pictured above, Perry is presented his award as the Stockholm Junior Water Prize International Winner by HRR Crown Princess Victoria of Sweden. (Photo credit: Jonas Borg)

IMPORTANT: State ISEF regional SJWP winners DO NOT automatically win their state SJWP competition. This cannot be assumed because not all students with water projects attend the state ISEF competition. Students must submit their research paper online along with other participants in order to be eligible.

State Competition

Eligibility and Entry

All high school students who have reached the age of 15 by August 1 of the competition year, and are in grades 9 through 12 with water-related science projects are eligible to enter the state SJWP competition. Students do not need to receive a regional SJWP certificate to participate, nor is it mandatory that they have participated in a science fair. Teams of up to two students may enter a project; the entire winning team is guaranteed a trip to the national competition

at the The Ohio State University to present their team project.

Students must enter the competition online at www.sjwp.org on or before April 15, 2020, or their specific state deadline. Entry includes uploading a research paper on their water-related science project. There is no specific paper formatting at the state level.

Judging

Shortly after the state deadline, WEF will forward the research papers received from each student to their respective State Organizer. Based on these papers and/or student interviews, including telephone interviews if needed, the MA judging panel will identify a state winner and email WEF blovett@wef.org with the winner's name by April 29. (See page 4 for information on establishing a judging panel.) Judging criteria, which may be helpful in your review, is located on page 12.

Upon identifying your state SJWP winner, immediately please contact and congratulate the student and notify their science teacher. WEF will announce all state SJWP winners at www.sjwp.org on May 1, 2020, unless arrangements have been made by a particular state to delay the announcement.

Shortly after the announcement, WEF will send an email to your state winner with information regarding paper guidelines, insurance forms, program details, etc. Students will be given clear instructions on how to arrange travel to the U.S. competition per the agreement between WEF and the MA.

U.S. National Competition

Eligibility and Entry

Only state SJWP winners are eligible to compete in the SJWP U.S. national competition. If a team (up to 3 students) is chosen as the state winner, all of the team members will be guaranteed a trip to the national competition at the The Ohio State University . If that team project advances to the international level, all of the students on that team will go to Sweden to compete.

A written paper following specific guidelines must be prepared and submitted online at

www.sjwp.org no later than May 12, 2020. The paper must conform to the U.S National Paper Guidelines (see page 15).

State Organizers or other members of the MA are encouraged to advise the student in order to improve the quality of their paper and/or research prior to submittal.

National SJWP participants can exhibit the same display used at their local science fair competition or a modified, more portable version. Cost of shipping will be at the student's expense.

Judging

A panel of distinguished water quality experts, representing diverse academic disciplines, selects the U.S. winner based on their paper and interviews at the competition. The winner and finalists will be announced in June during an awards ceremony held at the national competition at The Ohio State University.

The Event

The national competition includes an entertaining and educational program to be held June 18-21, 2020. WEF sponsors the event with the support of Xylem, Inc. This year's event will be hosted at the The Ohio State University, by the Water Environment Federation with support from the Ohio Water Environment Association and local water organizations.

International Competition

Eligibility and Entry

Only the designated winner of the national SJWP competition is eligible to compete at the international competition. WEF sponsors the student(s) travel to the international competition in Stockholm, Sweden. Accommodations and meals are sponsored by the Stockholm International Water Institute (SIWI)

WEF submits the national winner's paper to SIWI by June 24. The student is responsible for meeting SIWI's poster guidelines and transporting their project.

Judging

Students will exhibit their projects during World Water Week in Stockholm, Sweden, where they will discuss their project with a jury, researchers, politicians, and the media. They will be judged on their paper, as well as their presentation. The international SJWP prize is presented by HRH Crown Princess Victoria.



The U.S. winner travels to Stockholm during World Water Week to participate in cultural and educational events, as well as the international competition.

The Event

The international SJWP competition takes place during World Water Week each year at the end of August or beginning of September in Stockholm, Sweden. National SJWP winners from more than 39 countries participate in the six-day educational and cultural exchange program.

Winners and Awards

The SJWP competition consists of four levels: regional, state, national, and international. This tiered approach generates many winners; creating more incentives for participation. The more students that are involved, the more we are able to increase youth enthusiasm for water issues.

Of course, awards attached to winning are great motivators. To that end, WEF and its MAs with the support of Xylem, Inc. offer the following array of awards. In addition, some

MAs choose to attach additional recognition to their state award. Individual state awards are listed in the SJWP State Organizer section at www.sjwp.org.

SJWP Regional Winners Receive:

- An SJWP regional certificate
- A nomination to enter in the SJWP state competition
- A one-year complimentary WEF student membership

SJWP State Winners Receive:

- An all-expenses-paid trip to compete in the national competition at the The Ohio State University on June 18-21, 2020
- An SJWP state medal
- A one-year complimentary WEF student membership
- An SJWP frame-ready certificate

Note: Some MAs also choose to present their state winners with other awards, such as invitations to their annual conference, monetary award, gift cards, etc.

SJWP National Runners Up Receive (Up to 2 projects):

- A \$1000 scholarship (per project)
- A framed certificate

The SJWP National Winner Receives:

- A \$10,000 scholarship and the national trophy
- An all-expenses-paid trip to Stockholm, Sweden, to compete in the international SJWP competition August 22-August 27.

The SJWP International Winner Receives:

- \$15,000 USD and the international trophy
- SJWP diploma presented by H.R.H. Crown Princess Victoria, and recognition on stage during the Stockholm Water Prize Awards Ceremony.
- \$5,000 awarded to student's school.

The SJWP program also opens numerous doors for recognition, mentoring, scholarship, and internships. Previous U.S. SJWP winners have been written about in *USA Today*, *Readers Digest*, *Forbes Magazine*, *People Magazine*, *Huffington Post*, and featured on *Good Morning America*.

U.S. Stockholm Junior Water Prize Timeline and Checklist

DATE	ACTIVITY	DONE
October/November 2019	<ul style="list-style-type: none"> ▪ SJWP Regional Certificates and other promotional materials are sent to science fairs and student research symposiums across the country, including International Science and Engineering Fair affiliates. 	
November 2019	<ul style="list-style-type: none"> ▪ SJWP State Organizer's Handbook sent to MA State Organizers. 	
November 2017 through April 2020	<ul style="list-style-type: none"> ▪ MAs Help generate state participants, by promoting, judging at school, regional or state science fairs and awarding SJWP Regional Certificates or entry invitation cards. The certificates serve as a nomination to enter the SJWP state competition and contain information on how to do this. ▪ MAs compile a panel of water professionals who will review their state entries and select their state winner. 	
April 15, 2020	<ul style="list-style-type: none"> ▪ Due Date for high school students who have conducted water-related science projects to enter their state SJWP competition online at www.SJWP.org. 	
April 17, 2020	<ul style="list-style-type: none"> ▪ WEF compiles all research papers from each state and sends them to the appropriate MA State Organizer, who will work with their judging panel to determine their state winner. 	
April 29, 2020	<ul style="list-style-type: none"> ▪ Due Date for MAs to identify state winners based on research papers and/or interviews and notify WEF of their selection via email. 	
April 30, 2020	<ul style="list-style-type: none"> ▪ MAs contact and congratulate state winner and notify science teacher. Where possible, MAs arrange for certificate presentation either at winner's school or personally before the national competition. 	
May 1, 2020	<ul style="list-style-type: none"> ▪ State SJWP winners are announced online at www.sjwp.org. 	
May 1, 2020	<ul style="list-style-type: none"> ▪ WEF sends an information packet to students including competition details, national paper guidelines, insurance forms, and instructions for making travel arrangements. 	
May 4-8, 2020	<ul style="list-style-type: none"> ▪ The window for students to contact WEF's travel agency to find the most inexpensive, convenient travel itinerary arriving in host city on Thursday, June 13 and departing the morning of Sunday, June 16. <i>Note: Travel agency contacts WEF for approval of tickets more than \$600. For convenience, parents and guests may also book travel through this service, provided they use their own credit card for payment at the time of purchase.</i> Deadline for MA's that are not using WEF's travel agency to submit travel plans to national organizer is May 10. 	
May 5, 2020	<ul style="list-style-type: none"> ▪ WEF sends MA frame-ready certificate to MA to present or have presented to the student(s). 	
May 12, 2020	<ul style="list-style-type: none"> ▪ Deadline for students to submit a research paper (modified according to guidelines) for the national competition. Papers must adhere to the deadline! 	
May 18, 2020	<ul style="list-style-type: none"> ▪ Deadline for student videos 	
May 22, 2019	<ul style="list-style-type: none"> ▪ Deadline for Guest Registration for the SJWP Banquet and Awards Ceremony. 	
June 18–21, 2020	<ul style="list-style-type: none"> ▪ State winners attend U.S. national SJWP competition 	
July 2020	<ul style="list-style-type: none"> ▪ Invoices sent to MA for airfare minus travel agency fee. Reimbursement is due by COB August 31, 2108 	
August 23-August 28, 2019	<ul style="list-style-type: none"> ▪ International SJWP competition takes place in Stockholm, Sweden. 	



U.S. National Judging Criteria

Project ID #:

Project Title:

Name:

A project can earn a maximum score of 115 points. Each project is judged using six different criteria. Judges assign a score of 1 to 5 (1 being the lowest) to each category. This score is then multiplied by the weight factor assigned to that category. The scores for all six categories are then tallied to produce the total score.

1. Relevance

Score: _____ x 5 = _____

Relevance in terms of science, the environment, and society:

- Does the project target an important challenge in the water environment?
- Is the project scientifically relevant? Can the scientific level be related to basic, applied research and can the results be directly applied or implemented?
- Can the project contribute to the improvement of the quality of the environment and/or the quality of life?
- Does the project propose innovative solutions to unsolved problems?
- Does the project increase the awareness on water issues?
- Does the project integrate environmental and societal issues?

2. Creativity

Score: _____ x 4 = _____

Creativity of the project in relation to:

- Posing a problem
- Solving a problem
- Analyzing the data
- Experimenting or investigating
- Mediating and making the affected parties aware of the problem.

3. Methodology**Score:** _____ x 4 = _____

- Is there a clearly defined idea on which a result can be achieved?
- Is the problem well defined?
- In what way has it been limited?
- Has the work been planned accordingly?
- Is there adequate information upon which to draw conclusions?
- Have possible misinterpretations of the data been taken into consideration?
- Are there any new questions or suggestions for continued research?

4. Subject Knowledge**Score:** _____ x 3 = _____

- Is the student familiar with the literature and ongoing research in the field?
- What sources has the work been based on?
- Is the list of references satisfactory? Have the references really been studied?
- To what extent have sources of popular science been consulted?
- Is the author familiar with the topic dealt with in his/her work?
- Is the author knowledgeable of ongoing research and terminology in the field?
- Is the author familiar with alternative solutions?

5. Practical Skills**Score:** _____ x 3 = _____

- Did the student make the exhibit him or herself?
- Did he/she carry out the measurements, etc.?
- What help was provided by parents, teachers, professionals, etc.?
- Did the student take advantage of materials available in school?
- Where did the student obtain the equipment for the exhibit? Was it self-made?
- How well have available techniques been used?

6. Report and Presentation**Score:** _____ x 4 = _____

- Can the student present the work in a proper and informative way (written, verbally, and graphically through the exhibit)?
- Is the content of the work well structured?
- Is the level of the text, illustrations, diagrams, and language in the written report sufficient?
- Is the display visually appealing or are there any special qualities or personal touches?
- Is there a relationship between the display and text material?

Total Score: _____**Comments:**

FOR IMMEDIATE RELEASE

[Date]

Contact: [Contact's Name, Phone Number]

Email: [Contact's Email]

**Local Student to Represent [State]
in Prestigious Water Science Competition**

[City, State] – [student name], a student at [school name] in [city, state], has been named the state winner of the [year] Stockholm Junior Water Prize (SJWP) competition – the world's most prestigious youth award for a water-related science project. Selected for [his/her] project on [project topic], [student last name] will represent [state] at the national competition, [competition date], in [competition location]. Here [he/she] will compete against other young researchers from across the country for the opportunity to represent the United States at the international competition, which will take place in Stockholm, Sweden, in late August.

[Insert MA quote, example: "The state winner's study was very timely and relevant to issues facing the water quality community", said [Member Association president's name]. As a professional association of water quality experts, we are extremely proud to send [student last name] to the national competition.

The purpose of the SJWP program is to increase students' interest in water-related issues and to raise awareness about global water challenges. The competition is open to projects aimed at enhancing the quality of life through improvement of water quality, water resource management, water protection, and water and wastewater treatment.

In the United States, WEF and its Member Associations organize the state and national SJWP competition with support from Xylem, Inc. WEF is a nonprofit technical and educational services organization dedicated to preserving and enhancing the global water environment. [Member Association name], the organizer of the [state] competition, is one of WEF's 75 affiliated Member Associations.

For more information about the competition, visit

www.SJWP.org.

###

U.S. SJWP National Paper Guidelines

These guidelines are designed to help students prepare their paper in a professional format for the U.S. Stockholm Junior Water Prize competition. Please follow them as closely as possible. If your research would be better presented in a slightly different format, you may vary your presentation; however, we urge you to use the following guidelines.

Unlike other science competitions, the SJWP competition weighs the quality of the research paper much more heavily than the poster presentation. Past international SJWP winners wrote papers that closely followed these guidelines, and you may increase your chances of winning by following them, too!

DEVELOPING AN SJWP PAPER

Following are recommendations from the SJWP judging panel based on their experience in reviewing projects:

- Projects should not only include a problem statement but clearly explain how the project can contribute to a solution. Even if the project itself may not solve the problem, it should demonstrate how the activities in the project can play a role in a solution.
- Each project should try to address a cause-effect solution. This means studying not only the environmental effect (e.g. nitrogen load in a lake system) but also the causes behind the problem and ways of solving the problem. For example, a study on the eutrophication level of a lake in itself will not be highly competitive in the SJWP competition. On the other hand, if the study also addresses the causes behind the environmental disturbance and outlines how eutrophication monitoring will contribute to improved management of the lake environment, then the project will stand a better chance in the competition.
- Development-oriented research projects are strongly welcomed. However, it is important when presenting an applied solution to a problem (e.g., the invention of a new technology or a better way of analyzing a problem) that the project refers to previous work. Include an explanation of the gaps you are filling that others have not studied before.
- If the project focuses on raising awareness and creating a change in the way people manage water, it is important to document the work in a way that gives quantitative evidence as to what has been achieved. For example, it is not enough to say that "many people at the project site have started saving water with a new technology." Instead, it is important to show (e.g., through surveys) the number of people that have adopted a new way of managing water in a structured way (e.g., change over time, etc).
- If a project is a long-term school project, clearly show what has been done by whom over the years. Show what you or your team of up to two students has contributed to the final consolidated result.
- It is important that you clearly show that you were responsible for conducting the research and developing the written the project.
- Finally, it is important that you show that you have read relevant literature on the topic for your own orientation.

PAPER FORMAT

- The paper must be written in English.
- The paper must be typed in 12-point Times New Roman and left aligned using 1.5 spacing and the following margins: 1 inch on the top and the bottom, .75 inch on sides.
- Together with figures, photographs, tables, and annexes, the paper must not exceed 20 pages of single-sided 8.5 X 11 papers.
- All pages, except the title page, must be numbered at the bottom center. The Title Page is not included in the 20-page limit.
- The paper must be submitted electronically as a PDF document and no larger than 2MB

It is recommended that your paper is organized into the following sections:

Paper Sections and Numbering	
Title Page:	This is the cover page of the paper and should include the following information: "Entry into the Stockholm Junior Water Prize (Year)", Report Title, Name, and State. <i>This page is not numbered.</i>
Preliminary Matters:	This refers to the pages between the title page and the beginning of a research report. <i>Page numbering begins in this section.</i>
I. Abstract:	Concise summary of your research project and findings. (No more than 180 words.)
II. Table of Contents:	List of sections in a research paper by page number.
III. Key Words:	List of words or short phrases that research focuses on.
IV. Abbreviations and Acronyms:	List of abbreviations and acronyms used in the paper.
V. Acknowledgments:	Acknowledgement of those who assisted in the research.
VI. Biography:	Information about the author.
Paper Body:	This is the main body of a research paper.
1. Introduction:	Describes project in broad detail.
2. Materials and Methods:	Details all experimental procedures used in the project.
3. Results:	Presents all results obtained in research.
4. Discussion:	Discusses the results.
5. Conclusions:	Presents conclusions of research.
6. References:	Provides information on work referenced in a research paper.
7. Bibliography (if necessary):	Provides information on sources of information that were consulted generally, but not specifically referenced.
8. Annexes (if necessary):	Details non-standard methods or other information too lengthy for the paper's main body.

DETAILED GUIDANCE FOR YOUR PAPER

1. TITLE PAGE

You may design the title page of your paper as you wish, but it must contain the following information in an easily legible form:

- "Entry to the Stockholm Junior Water Prize [year]"
- Paper title
- Your name(s)
- Your state

2. PRELIMINARY MATTERS

Preliminary Matters refers to the pages between the Title Page and the first page of your main paper. These pages should include the following items (preferably in the order given):

a. Abstract (No more than 180 words.)

The abstract is a complete and concise summary of the research project and the findings. It should provide an interesting synopsis of the project and use language that appeals to a broad audience. The abstract should contain the following:

- a one-sentence statement of the objective of the study
- the research methodology used to arrive at the conclusions
- the results observed
- the conclusions of the study (including recommendations and suggestions)

Tips for a Good Abstract:

- Write the abstract last so that it accurately reflects the content of the paper.
- Briefly state the problem or purpose.
- Indicate the theoretical or experimental plan used.
- Summarize the principal findings and point out major conclusions.
- If abbreviations are used, define them at first use in the abstract and again at first use in the paper body.

For abstract samples, visit www.sjwp.org and click on Journal of the U.S. SJWP in the box on the left-hand side of the page.

b. Table of Contents

The table of contents should list all of the sections and subsections in the paper.

c. Key Words

This list should contain words or short phrases that capture the main topics of your research. They are used to help individuals locate information on specific research areas, such as through a web search.

d. Abbreviations and Acronyms

This list should contain every abbreviation and acronym used in the paper.

e. Acknowledgments

The acknowledgments section should be used to list and thank all the people who helped you in your project. It is important to clearly indicate how much external help you received.

f. Short Biography (No more than half a page.)

The biography should include information about you, including what your interests are, what you want to study, etc.

2. INTRODUCTION

This section sets out your project in broad details. Describe the water-environment problem you studied and why it was important. Also put your project in its scientific setting, detailing at least the most relevant work done on your project topic by others. We don't expect a very detailed literature review, but we do expect that you understand the scientific context of your project. (See References for advice on how to give in-text references to the work of others.)

3. MATERIALS AND METHODS

In this section, you must detail all of the experimental procedures that you used in your project – all methods and all materials. However, for standard analyses it is not necessary to describe the processes in detail; it is sufficient to give a reference to the methods in a book. If non-standard methods were used, you must describe them in detail. If they are too lengthy, they can be placed in an Annex at the end of your paper (see Annexes).

4. RESULTS

In this section, you present all of the results you obtained in your research. Present them either as tables or figures, along with an appropriate description, but do not present the same information in both table and figure format. Choose whichever of these formats you think is most suitable for the particular set of results you are presenting. Of course, if you do an analysis of your results, you can present the results of this analysis in a separate table or figure.

5. DISCUSSION

Note: This is an extremely important section which the judges pay close attention to, so think about it very carefully.

Here you must discuss your results. You may wish to include the more important analyses of your results in this section (rather than in Results section). You must discuss how the results are important to the water environment problem you were studying, how novel they are, and how they relate to the results of others working on a similar project (are they the same, similar, or different? why?).

You should also discuss your results in the wider scientific and/or social context, for example, are your results useful to local or national government agencies? Are they relevant to local people? Explain your answers.

Of course, if your project is completely novel, then you may not be able to discuss your results in relation to the results of others. In such a case, you must discuss your results in the wider scientific and/or social context only.

6. CONCLUSIONS

We recommend that you number your conclusions and present them on a maximum of two pages (one page is perfectly acceptable). Your conclusions should be short and to-the-point. As a guide, each conclusion should be no more than 1–3 short sentences long. Please remember that this section is for your conclusions and *only* your conclusions. It is not the place to discuss your results (all discussion belongs in Discussion).

7. REFERENCES

The purpose of providing a reference is to enable interested parties to obtain and read the reference, so you must provide all the information necessary for this. If you are familiar with the "Harvard" system, then you may use it. Otherwise, we recommend you use this simpler method:

In the text, give references as numbers in square brackets. For example:

"Smith [1] found that ..., but other workers have found the opposite [2, 3]."

"We used the acid-dichromate method to measure the wastewater COD [4] and the membrane-filtration technique with lauryl sulfate broth and overnight incubation at 44 to count the number of fecal coliform bacteria in both the wastewater and the river [5]."

Immediately after the Conclusions section, you must list in detail all the in-text references you have made. The list is numerical, using the numbers you used in the text. So, in the above example, the first reference is to Smith. How you present this reference depends on whether it is a book, a paper in a scientific journal, a chapter in a book, or a newspaper report.

a. Book:

[1] Smith, AB (2002) *The Biology of Polluted Rivers*. Academic Press, San Diego, CA.

i.e., Surname, Initials (Year) Title of Book. Publisher's Name, City and Country (or State if the USA) of publication.

b. Journal or Paper:

[1] Smith, AB (1998). The biology of highly polluted waters: a review. *Journal of Aquatic Biology* 31, 984–1018.

i.e., Surname, Initials (Year). Paper Title. Full Name of Journal Volume Number, First and Last Page Numbers of the Paper.

c. Book Chapter:

[1] Smith, AB (2001). The biology of polluted waters. In *Water Pollution* (ed. CD Jones and EF Bull), pp. 547–591. Academic Press, San Diego, CA.

i.e., Surname, Initials (Year). Title of the chapter, In Title of book (ed. [= edited by] Initials and Name of all the editors), first and last page numbers of the chapter. Publisher's name, City and Country/State of publication.

d. Newspaper or Magazine Report:

[1] "Our rivers are polluted", *Daily Express* (London, England), 5 June 2003, p. 6.

e. Non-English References:

If the language of the reference uses the Latin alphabet, give the title in the original language followed by a translation in English in square brackets – for example:

[5] Poincaré, JP (2001). *Le Language Naturel* [Waste Stabilization Ponds]. Editions Eau, Paris.

For other alphabets, simply give the translation in English with the original language given at the very end in round brackets – for example:

[11] Chinese Academy of Engineering (2002). Design Manual for Wastewater Treatment. Chinese Academy of Engineering, Beijing (in Chinese).

- f. More than one author use: [1] Smith, AB, Jones, CD, and Bull, EF (1996).
- g. When referencing a Web site, include the author (if any), title of the site, URL, date accessed, and any other identifying information.

Library of Congress Home Page. <http://lcweb.loc.gov> (accessed Dec 2005).

8. BIBLIOGRAPHY

In addition to the list of specific references, you may (if necessary) give a list of books and other sources of information that you consulted generally but have not provided as in-text references. This list is termed Bibliography, and it follows immediately after References. The items in your Bibliography list are referenced in the same way as described above.

- Remember to give all the information necessary to enable someone else to obtain the references you quote in your paper.

9. ANNEXES

Use annexes only if necessary, for example, to detail non-standard methods of analysis or to give detailed results if you have only summarized them in the Discussion section. Annexes are used to give detail that would otherwise make the main text too lengthy or cumbersome. You should number your annexes in order, as follows:

Annex I. Method used for the determination of chlorophyll a

Annex II. Detailed results of in-river chlorophyll a measurements

If there is anything in these guidelines that you do not fully understand, ask your teacher or project supervisor for help. This research paper could easily be considered college-level work, so don't be afraid to ask!

