



Sustainability

Sustainability Competition

An Action Plan for PSWC 2019 - 2021

Pacific Southwest Conference 2018

1.0 Event Description

The way in which we, as a society, have traditionally thought about waste is a model that is flawed, and one that will not provide for a sustainable future in an environmentally stressed world. As a society, we harvest raw materials, use these to manufacture products which are then consumed and consequently thrown away - with little being done to encourage reduce and reuse. This model of consumption has had immense consequences. In a study done by the EPA in 2014, it was determined that Americans generate 258 million tons of solid waste per year - of this waste 52.6% is landfilled, equating to 135.7 million tons of waste being landfilled each year.¹ If we continue down our current consumptive path, it is estimated by the Ellen MacArthur Foundation that there will be more plastic than fish in the ocean by the year 2050.² Change is eminent and necessary for a sustainable future.

As engineers, we aim to challenge the way the world exists today by seeking solutions for problems in the world - one of those problems being the need for a sustainable future. As a national organization, ASCE is dedicated to ensuring a sustainable future for human society. A society where the capacity for an individual to maintain and improve their quality of life is sustained indefinitely without incurring degradation to the quantity or quality of resources - whether they be natural, economic, or social resources.³ To further the sustainability mission of ASCE, and embrace sustainability in PSWC, we have created this sustainability competition with the aims of creating a plan of action for PSWC 2019 - 2021 to make the conference environmentally sustainable.

The Pacific Southwest Conference is one of the largest student conferences in the nation, and consequently has a large environmental impact. This sustainability competition challenges students of the PSWC 2018 conference to evaluate the current environmental impact of PSWC 2018, and then develop a 3 year, phased plan of action for PSWC 2019, 2020, and 2021 Planning Committees for implementation, with the ultimate goal of achieving an environmentally sustainable conference in 2021.

¹ https://www.epa.gov/sites/production/files/2016-11/documents/2014_smmfactsheet_508.pdf

² <https://www.theguardian.com/business/2016/jan/19/more-plastic-than-fish-in-the-sea-by-2050-warns-ellen-macarthur>

³ <http://www.asce.org/sustainability/>

2.0 Objective

The objective of this competition is to evaluate and quantify the current environmental impact of PSWC 2018 in terms of waste generated from the conference and its potential environmental impact. Then, a comprehensive action plan shall be developed to be implemented in phases by the hosts of PSWC 2019 through 2021, with the ultimate goal of achieving an environmentally sustainable conference. In this competition, a zero waste event is defined as one where no waste created a result of the conference's activities ends up in a landfill, and is diverted through recycling, composting, and other reuse.

3.0 Participant Rules

- Each University may enter only one team.
- Teams must consist of 3 members at minimum.
- Teams must not exceed more than 5 members.
- Everyone on the team must be a registered participant of PSWC 2018.
- The team must have at least one underclassman.
- The team must have at least one male and female.
- It is expected that academic and professional integrity be upheld in this competition, therefore unethical practices such as plagiarism will not be upheld and will result in disqualification from the competition.

4.0 Action Plan

Each team is required to submit a technical paper detailing the specific initiatives and goals of how to reduce PSWC's impact to achieve an environmentally sustainable conference, and must include the general requirements outlined below.

4.1 General Requirements

The body and appendices of the technical paper must be presented on white 8 ½" x 11" pages in portrait orientation, with a 1" margin to the left and right and 1" header and footer. No background images or watermarks are permitted behind the body or appendices of the paper. No blank pages are to be inserted into the report. Body text must be in English and use 12-point, Times New Roman, and be single spaced. Section headings and subheadings may be of greater than 10-point font.

Photographs, tables, line drawings, graphs, headers and footers are permitted. Captions used are to be no less than 10-point, normal width font. Items such as page numbers, logos, designs, section headings, etc. may be incorporated into the header and footer of the pages and are not subject to the font requirements of the body text. The header and footer may be located within the margin itself (i.e., outside of the body text limits) and are limited to 1".

4.2 Format

Each action plan must include the following items and/or sections:

1. Memo formatted page addressed to PSWC Planning Committees 2019-2021
 - a. Followed by a brief description of contents
2. Professional cover page including:
 - a. University name
 - b. Event name
 - c. Participants names
 - d. Date submitted
3. Professional table of contents
 - a. Must have all sections and subsections titles listed with page numbers
4. Body of work
 - a. Current Impact of PSWC
 - i. Identify all negative impacts that the conference has on the environment by, at a minimum, addressing the following areas:
 1. Waste
 2. Energy consumption
 3. Emissions
 - a. Transportation
 - b. Location and Facilities
 - ii. Identify potential areas for improvement and mitigation within the conference
 - iii. Include the following: formula, equations, software, in-text references, and field work
 - b. Concisely state goals and key metrics to effectively mitigate the previously identified impacts over a 3-year time period to achieve environmental sustainability by 2021
 - i. Phase I goals for year 2019
 1. Goals
 2. Metrics
 3. Outcomes
 - ii. Phase II goals for year 2020
 1. Goals
 2. Metrics
 3. Outcomes
 - iii. Phase III goals for year 2021
 1. Goals
 2. Metrics
 3. Outcomes
 - c. Discussion
 - i. Evaluate how to achieve the set goals
 - ii. Discuss the feasibility of the goals in the given time period
 - iii. Discuss challenges that may be faced during implementation

- iv. Consider barriers to be faced by host school, or additional requirements to be made for host school and potential changes in events
- d. Conclusion
- e. References
 - i. Must be cited in IEEE
 - ii. References utilized should only be from credible sources

5.0 Poster Presentation

A poster presentation, of 5 minutes \pm 30 seconds, is required for each participating school. All presentations must be presented in a professional and informative manner. All presentations must be presented in English. Presentation order will be randomly selected before the competition begins and will be provided no later than the time of on-site registration. The oral presentations will be open to the public for viewing. An additional three to five minutes are to be permitted for judges' questions immediately following the oral poster presentation. Questions are not to be permitted by members of the audience.

5.1 Equipment

Each team must provide their own poster board of dimensions no larger than 36" x 24" at the time of the presentation. No poster stand will be provided.

5.2 Presenters

Presenters may be any of the registered participants of the sustainability team who have officially signed in at registration. Presenters include those with speaking roles throughout the course of the presentation. A minimum of three participants must speak during the live presentation. Teams may not prerecord any speaking parts. No handouts or other materials are to be given to the judges as part of the oral presentation. All team members participating in the competition must be available for judges' questions at the end of the presentation.

5.3 Deductions

Score deductions can include but are not limited to:

- Giving a presentation outside the time limit of 5 minutes \pm 30 seconds
- Failure to arrive on time for the allotted presentation slot
- Failure to follow the poster/oral presentation requirements
- Failure to obey above guidelines such as poster dimensions, number of presenters, etc.

6.0 Scoring

6.1 Technical Report - 75%

See Judges scoring form below

Sustainability Action Plan - Scoring Form			
Criterion	Max	Actual	Notes
1) Articulation of a compelling argument	15		
a. Clear and arguable statement of thesis	2		
b. Relevant evidence drawn from applicable and credible sources	5		
c. Original analysis of evidence such that it supports the thesis	4		
d. Explanation of the arguments significance	4		
2) Logical and persuasive organization	40		
a. An introduction that establishes the importance of your topic and the purpose of your paper	6		
b. Body paragraphs that address the specified areas	10		
c. All three phases that are clearly formatted and developed for implementation	15		
d. Conclusion that reminds the reader of what is at stake in the argument and suggests an appropriate response	6		
e. Overall structure that emphasizes the most important goals or analysis and does not belabor matters of little significance	3		
3) Awareness of audience	10		
a. Appropriate tone and use of precise vocabulary	4		
b. Clear definitions of key or unfamiliar terms, convincing explanations of complex data or methods of analysis	3		
c. Acknowledgement of and response to potential objections to your argument	3		
4) Professionalism and structure	10		
a. Appropriate and complete acknowledgement of sources and quotations	3		
b. Correct and consistent IEEE citation format	3		
c. Adherence to specified font and formatting guidelines	4		
Total:	75		

6.2 Poster Presentation - 25%

The poster must take a similar format to the figure below. Figure 1 is provided as a reference action plan template, but will not be used for final scoring of the poster.

Work Plan Template						
Goal 1: Decrease the proportion of AI/AN's in Southern Plains Region at risk for Diabetes.						
Goal 1 Overall AI CEED Objectives	Goal 1 Partner Objectives	Activities	Measures of Effectiveness	Data	Time-frame for Assessing Progress	Staff Responsible
1.1) Increase the number of physical activity/wellness programs in and after school and in communities	By 9/29/2009, assist Addams Elementary School in providing the state requirement of 150 minutes per week of health education & physical activity for children grades K-5, utilizing CATCH curriculum and experiential learning activities.	<ol style="list-style-type: none"> 1. Provide 30 minutes per week of health education & physical activities for children K-5 at Addams Elementary School. 2. Provide after school program for up to 40 youth grades 1 – 5, including 60 minutes per day of MVPA. Includes weekly nutrition & fitness lessons, including CATCH curriculum & experiential learning activities. 	<ul style="list-style-type: none"> • Number of classes • Number of students • Number of afterschool participants • Amount of time in health education & MVPA 	<ul style="list-style-type: none"> • Attendance sheets • Lesson records 	9/30/2008 - 9/29/2009	
1.2) Increase the number of environmental, policy, or system changes related to physical activity/nutrition in the Southern Plains Region.	Implement a healthy nutrition alternative policy for Tribal employees and use our program as a role model for other Tribes and organizations.	<ol style="list-style-type: none"> 1. Advocate for and write alternative healthy snacks policy in the workplace 2. Conduct four healthy nutrition days at the Tribal complex to demonstrate ways to eat healthier snacks. 	<ul style="list-style-type: none"> • Employee support for the policy • Employer support for the policy • Policy adoption 	<ul style="list-style-type: none"> • Employee survey with signature of support • Letter of support from management 	9/30/2008 - 9/29/2009	

Figure 1: Example poster template