

## **NRSEF Policy on Continuation Projects**

In keeping with ISEF and CWSF policies, projects which are a continuation of a previous project must be identified and work presented which is based on the current year's research only. As such, any student who has entered a previous project in NRSEF on a similar topic as the current year's entry must (a) identify the previous work on application to NRSEF via a continuation project form, (b) justify the difference between the previous work and the current work on that form, and (c) be judged only on work performed during the past twelve months.

A continuation project is defined as any project based on the students' prior research where that research occurred more than twelve months ago.

Continuation projects must document, on application to NRSEF, how the project differs from the previous project and is a substantial expansion of that work (for example, testing a new variable or a new line of investigation). A project with the same methodology and research question as a previous project, even with an increased sample size, is not an acceptable continuation.

The display board and abstract must reflect the current year's work only and projects will be judged only on that work. Any supporting data from previous year's projects must be identified clearly on the display board as originating from a previous project. The same applies to data books from previous research which may be exhibited but must be clearly labeled as such.

# NRSEF Continuation Form

This form is required where a project is a continuation of a previous project or in any way includes data from a previous project.

<b>Component</b>	<b>Current Project</b>	<b>Previous Project</b>
1. Title		
2. Change in Goal/Purpose		
3. Changes in Methodology		
4. Variables Studied		
5. Additional Changes		

In addition, attach a copy of the abstract from the previous project.

# NRSEF Continuation Projects – Example Case Study #1

Consider the following example of a continuation project which is unacceptable:

*John built a basic Raman spectrometer in grade 10 to evaluate the purity of water. He was looking for the presence of acetone in water (considered a pollutant). Using a 532nm 5mW laser pointer, a filter, and a spectrometer borrowed from the outreach program, the Raman spectrometer setup worked, and the spectral peaks for acetone could be seen but the results were inconclusive given that fluorescence occurs where a 532nm laser is used.*

*He presented the project at NRSEF and won a medal, going on to the CWSF.*

*In grade 11, John improved the project by using a 785nm laser. The basic procedure, methodology, and variables studied were identical, as was the experimental setup - the only change was the wavelength of the laser and the required filter. Running the same water samples he observed a much stronger and cleaner acetone spectrum.*

*His backboard was essentially the same - the method was essentially identical and so, as expected, some of the info presented is the same as previously presented (the entire "method" section, as well as some of the data presented).*

The continuation form would then resemble the following:

<b>Component</b>	<b>Current Project</b>	<b>Previous Project</b>
1. Title	<i>Use of Raman spectroscopy to detect residual acetone in waterways</i>	<i>Detecting poisons in our water</i>
2. Change in Goal/Purpose	<i>An improved Raman spectroscopy system is used to detect the presence of acetone and benzene in waterways</i>	<i>Raman spectroscopy is used to detect the presence of acetone in natural waterways</i>
3. Changes in Methodology	<i>Water is tested using an improved Raman spectroscopy technique (with 785nm excitation) for the presence of acetone and benzene</i>	<i>Water is tested using Raman spectroscopy (with 532nm excitation) for the presence of acetone</i>
4. Variables Studied	<i>Presence of a Raman signal</i>	<i>Presence of a Raman signal</i>
5. Additional Changes		

This is an unacceptable continuation project on numerous accounts, including the fact that the methodology and procedure were the same as a previous year's project and even the variables studied were the same. In a variation, assuming the current project examined the water for the presence of benzene the project would still be unacceptable if the method remains the same.

The lack of changes are evident from the continuation form: one cannot claim a significantly new method, nor new variables investigated.

What would be acceptable would be a project based on some new method of analysis of the data (for example, a Fourier spectrum) which was no part of the original project however in this case the previous data must be identified as having originated from a previous project and judges must be made aware of this fact.

## NRSEF Continuation Form – Example Case Study #2

The following is an example of a properly completed continuation form.

<b>Component</b>	<b>Current Project</b>	<b>Previous Project</b>
1. Title	<i>Developing a faster hockey puck</i>	<i>Which hockey puck travels the fastest?</i>
2. Change in Goal/Purpose	<i>Designing a faster hockey puck by coating it with various friction-reducing coatings</i>	<i>An examination of how fast five commercial hockey pucks travel on ice</i>
3. Changes in Methodology	<i>Coatings are applied to a standard puck and speed measured. Friction coefficients are determined from observed data</i>	<i>Five pucks are shot across the ice at the same initial speed and distance traveled is measured.</i>
4. Variables Studied	<i>Coefficient of friction with each coating</i>	<i>Distance traveled</i>
5. Additional Changes		

Note that this is an acceptable project since the entire methodology changes (applying coatings vs. testing existing pucks). An unacceptable project would have been reproduction of the previous experiment using more pucks or different type of ice.