

# The Formula

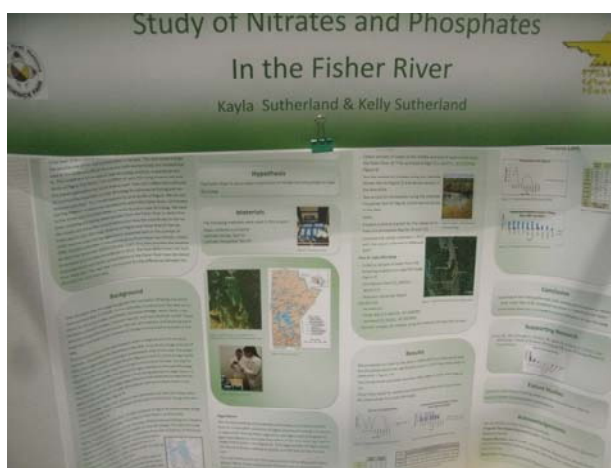
Mid-Canada Regional Section  
December 18, 2014



**CELEBRATING 27 YEARS  
AS A SECTION OF AOAC**

At right is a typical  
project backboard  
for a Provincial  
science fair entry.

Pics of other  
projects are shown  
in this issue of the  
MC-AOAC Formula.



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**TUESDAY JUNE 9 2015**

PLANNING FOR THE BIGGEST DAY OF THE YEAR  
FOR MSSS MEMBERS AND THE COMPANIES  
WHICH SUPPORT THEM

**COMMENT FROM YOUR AOAC EXECUTIVE P. 2, 3, 4**  
**PRIZE PHOTO CONTEST P. 7**  
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**Cover photo: Science is alive and well in rural Manitoba.  
This project studied water chemistry on a northern reserve.**

I hope you enjoy this issue. We hope to see all of you at Mid-Canada's biggest day of the year on June 9, 2015. After many years of meeting on Thursdays, please note that this is a TUESDAY. My apologies to all for not getting an issue of the FORMULA into your hands months ago. Each issue requires a great, celestial confluence. Members of your AOAC Executive have to find time to prepare a contribution, and too often work and family keep them occupied.

If you would like to spend a few hours this year, helping Mid Canada AOAC succeed into the future, please consider letting someone know. We would like to see a few more fresh faces on the Executive in 2015. It is a fun group of people, and my guess is that you would enjoy being a part of it.

If you can think of anything that would be of interest to your fellow members, in a presentation or a newsletter article, please let any member of the AOAC Executive know.

*David*

**Contributions are most welcome for next time!**

**Why not tell us what is new at your lab?**

**Please let us know how you liked this at**

**[porschefamily@gmail.com](mailto:porschefamily@gmail.com)**

**David Grant, Editor**

**All photos and text, not otherwise attributed, were created by  
D.Grant**

On behalf of Mid-Canada AOAC, I am excited to invite you to the 26<sup>th</sup> Annual Mid-Canada AOAC Day, which will take place at the Victoria Inn Hotel and Conference Centre on June 9<sup>th</sup>, 2015. We hope to build on the success of last year's event by featuring an expanded slate of talks, more training opportunities in the form of short courses, and another compelling keynote speaker. If there are see at next year's AOAC Day, I encourage you to engage with our executive and let us know!

Manitoba's scientific community has certainly been in a state of flux over the last couple of years with the significant changes to employment in both public and private sector. It is important for us change too. AOAC Day is Manitoba's largest annual scientific conference, but there is still plenty of room to grow! We are working hard to bring together previously untapped scientific activities going on in the province. No longer simply for analytical chemists -- Mid-Canada AOAC is becoming a diverse and robust scientific organization.

In addition, we've witnessed several other positive changes to our organization in the past year. We've had a refreshing influx of five new members into our executive, we've redesigned our website, and brought in new payment methods for vendor registrations. A special thank you goes to all of our executive members who volunteer their valuable time to make these initiatives happen. Expect more exciting changes to come in the months leading up to AOAC Day.

To all of our members, I wish you a joy-filled holiday season and a happy and healthy 2015 !

*Brian Asher*

President, Mid-Canada AOAC

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## CHASING ZERO by David Grant, P.Eng.

Our chapter of AOAC has a recent history of providing educational opportunities. We should strive for this to continue, for the benefit of all of us, both our members, and our employers. One such topic was the MEASUREMENT OF UNCERTAINTY. This is an essential tool for most of our economy, not just those responsible for lab results.

Decades ago, I was exploring a new analytical field: the use of HPLC to study the earliest stages of thermal breakdown of the materials in power transformers. After optimizing aliquot volumes and wet chemistry techniques, I was left pondering some very small peaks. By not having any competing peaks, and doping similar samples with the subject compound, I was assured that the peaks I measured were the right ones. Other researchers in this field had limited their study to concentrations 1000 to 10,000 times greater. They made some obvious discoveries, but not in the importance of early diagnosis. My many years of experimental work taught me where to look for sources of error in this work. A newer researcher could have been brought up to speed on this with a good AOAC course. This is just one reason for us all to support the work of your local Mid-Canada AOAC group. Offer to teach us, or tell your executive the area in which we should offer our next Course.

Because I could follow the early growth of parts-per-trillion levels, I could carry out experiments of reasonable duration, simulating real world degradation. Operation of expensive electrical apparatus, for many decades, without degradation, is the goal of every owner, so it was very valuable to know how to follow the early stages of overheating damage.

Lisa Fernando will be the keynote speaker at AOAC Day, June 9th, 2015.

Lisa is a biologist at Canada's leading Virology Lab, which most of you know is in Winnipeg.

With the Ebola virus in the news so much, having Lisa speak on this topic is very much appreciated.



# Funding

## to hire students

Would you like to have one or more students, working for you, but you have limited funding? Here are two opportunities, which can be used separately or combined.

1. NSERC can provide funding to an industrial organization for up to 15 students per year. They contribute \$4,500 and the organization \$1,125 for a 16-week period. The conditions are that the work involve relevant research experience and that it be conducted at the organization's
2. facility. The term research is used in a **loose and broad** manner, e.g., improvement, other.
3. The Faculty of Agricultural and Food Sciences at the UM offers funding to organizations that hire coop students. The contribution is up to 25% of the wages.

Please, don't hesitate to contact the coordinator, Dr. Laura Lazo, regarding your needs and whether the work is eligible under NSERC. Contact: 474-6943 or [laura\\_lazo@umanitoba.ca](mailto:laura_lazo@umanitoba.ca).

# Mid Canada AOAC Instagram Contest



- 1) Follow us @ MCAOAC on Instagram
- 2) Tag your science related pictures to #mcaoac
- 3) Upload as many pictures as you like!
- 4) Winner will receive a \$50 Polo Park gift card
- 5) Contest closes January 31, 2015

All photos must be original. They must have been created by you. By posting your pictures to #mcaoac, you consent to Mid-Canada AOAC using those pictures on the AOAC website and in the Formula newsletter.

## Basic contest rules:

All photos must be original. They must have been created by you.

By posting your pictures to #mcaoac, you give permission to Mid-Canada AOAC to use those pictures on the AOAC website, in the Formula newsletter and for other promotional purposes.

**MARK YOUR CALENDARS!**  
**THE 26<sup>th</sup> ANNUAL MID-CANADA AOAC DAY**  
**is on**  
**Tuesday, June 9<sup>th</sup>**

Registration fee: \$25

**AOAC Day Features:**

Manitoba's largest annual scientific vendor exhibit  
Oral presentations. Free workshops/training sessions.  
SafeWork MB lab training session.

**Past topics** have included:

- Good pipetting technique
- Good weighing practices
- Developing Safe Work Procedures
- How to Get the Most out of Your ICP-OES and ICP-MS,  
Fit-for-Intended Use Through the  
Quality by Design (QbD) Approach to Analytical  
Methods

Buffet lunch with keynote address

Door Prize draws + participation awards

**MAKE AOAC DAY BETTER!**

**Tell us what would make AOAC Day right for YOU!**

**Become a presenter!**

**We are currently accepting oral presentations!**

Presentations are 20 minutes long and can be on any  
aspect of analytical science including (for example):  
Research at the undergraduate, graduate or post-  
graduate level.

Industry perspective on a relevant topic with a focus on  
the chemistry, biochemistry or microbiology involved.

Description of the scientific process and science,  
behind the solution of a significant problem.

Email Ray Bacala, [ray.bacala@grainscanada.gc.ca](mailto:ray.bacala@grainscanada.gc.ca)  
with your topic idea, to reserve your spot!



### **Suggest a training course or workshop!**

Can be in conjunction with AOAC Day or stand-alone.

We are a non-profit organization with no salaried staff –

If we cannot source it for free, we will only charge on a cost-recovery basis!

What training is required in your workplace? Is it financially out of reach?

Cost reductions are realized by:

Flying one trainer to Winnipeg rather than multiple attendees elsewhere

Increasing attendance by including other workplaces.

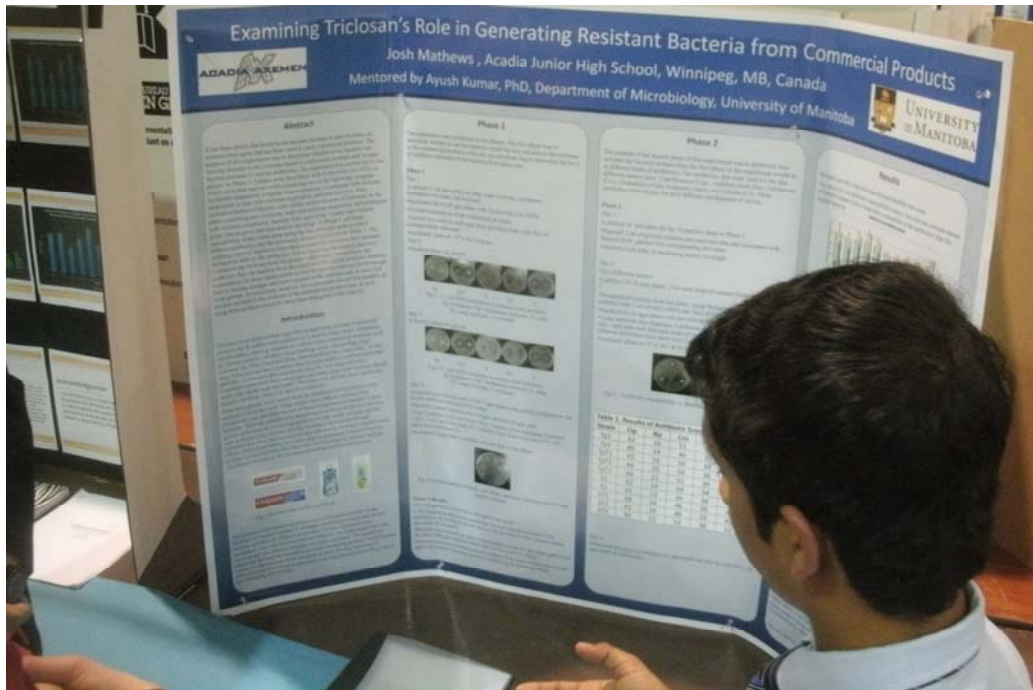
Email suggestions to  
Brian Asher,  
[brian.asher@gov.mb.ca](mailto:brian.asher@gov.mb.ca)

or to Doug Goltz,  
[dgoltz@uwinnipeg.ca](mailto:dgoltz@uwinnipeg.ca)

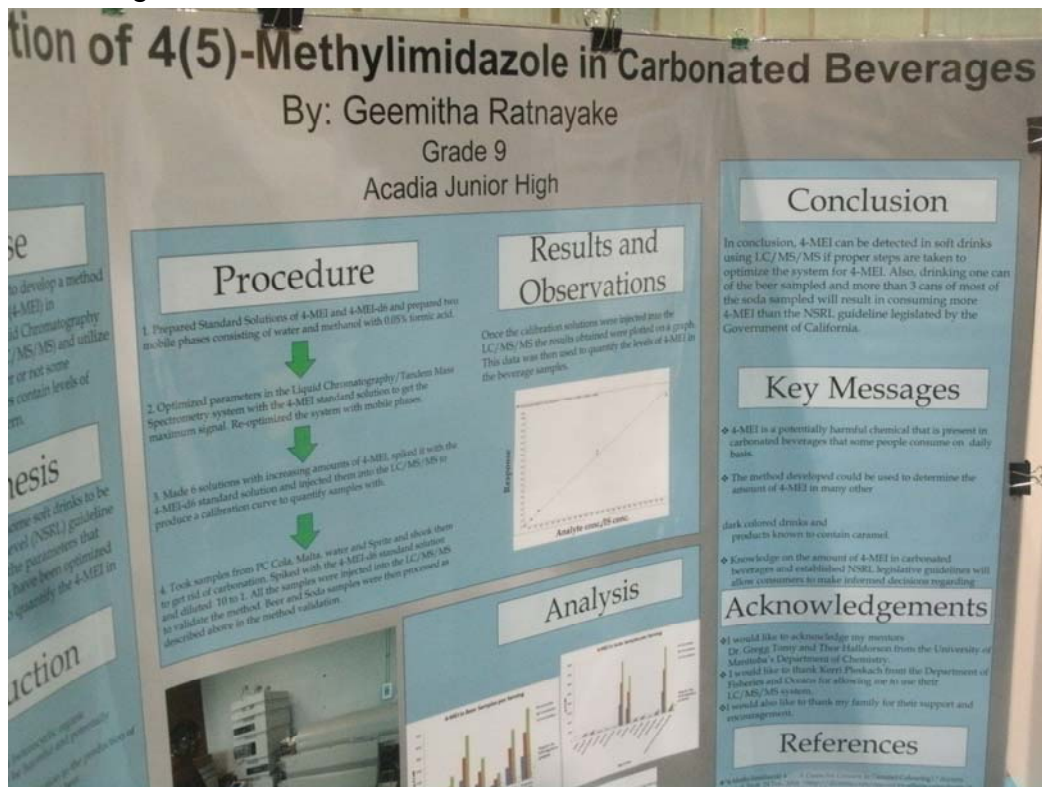


### **2014 VENDORS:**

Accuscience, Agilent Technologies, ATS Scientific,  
Bruker, Caledon, Canadian Life Sciences, Cedarlane  
CEM Corporation, Chromatographic Specialties, EMD  
Millipore, ESBE Scientific, K' (Prime) Technologies,  
Metrohm Canada, Mettler Toledo, Molecular Devices,  
Neogen, Northern ANI, Perkin Elmer, Questron,  
R-Biopharm, Romer Labs, Sartorius, SCP Science,  
Sepax Technologies, Skalar, Thermo Fisher Scientific,  
Vicom, Waters



**AOAC AWARDS** Josh Mathew's study of Triclosan, #3501, above was an AOAC prize-winner, as was Geemitha Ratnayake's work on determining trace constituents of soft drinks, #3401, below.





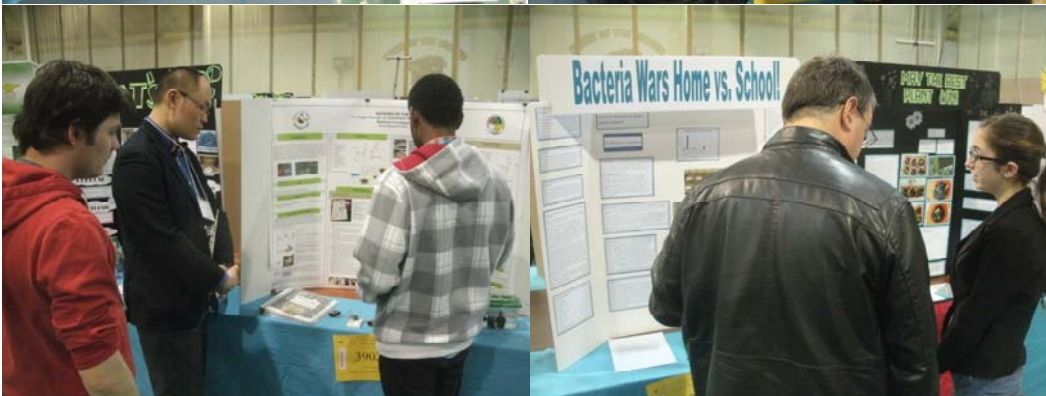
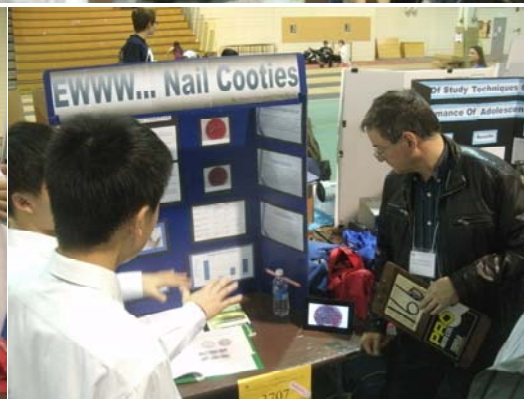
A plaque and a cheque were also awarded to Sydney Mangilit for project #3405, titled "Got vitamin C?" (Sorry no pic now available.) Honorable Mention was awarded to Adam's "Power to Perform" project, above right, and to Nitrates and Phosphates in the Fisher River, by Kelly and Kayla Sutherland.

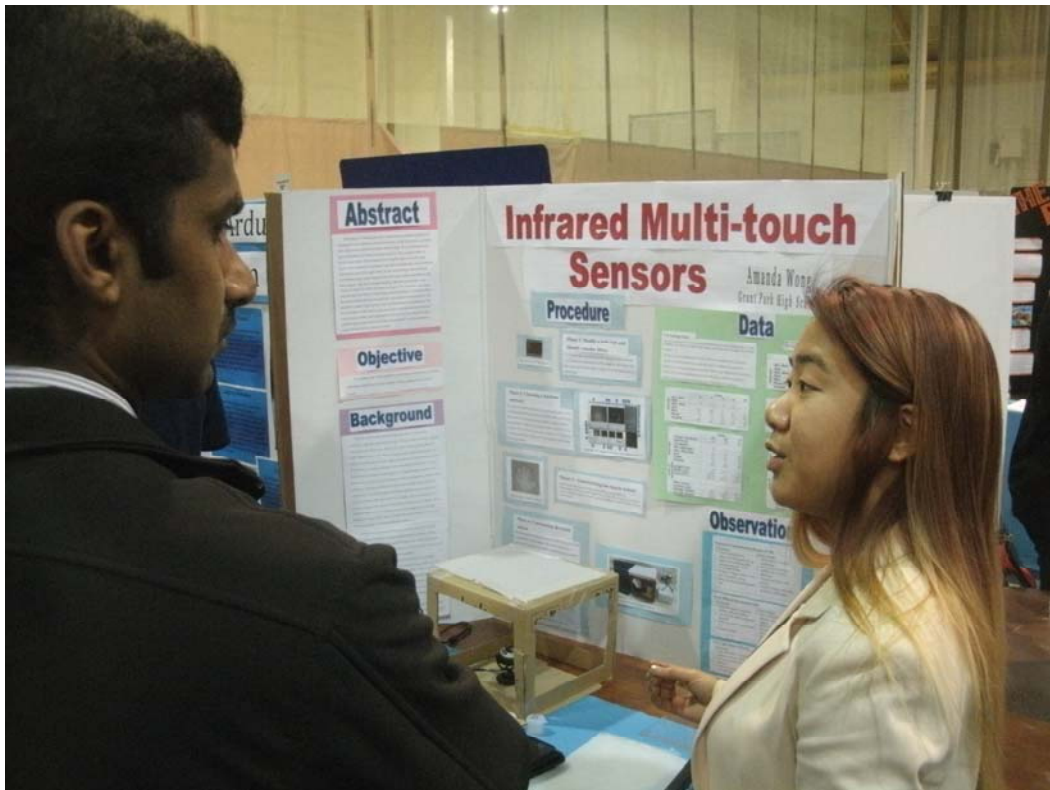




## JUDGING SENIOR PROJECTS AT THE 2014 MSSS.

During most of the time students were interviewed, I was busy listening to them. Here are a few candid pics I took when I was not busy doing these formal evaluations.

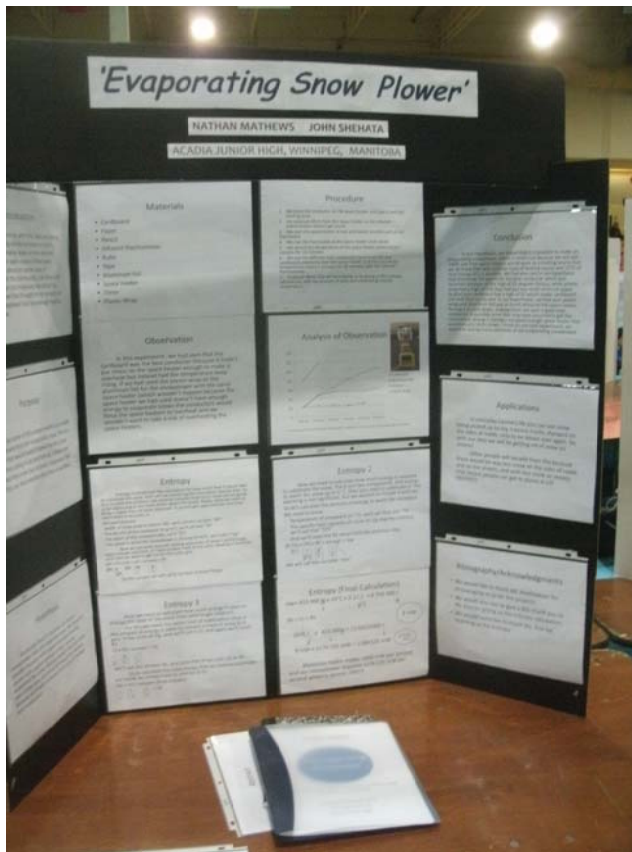




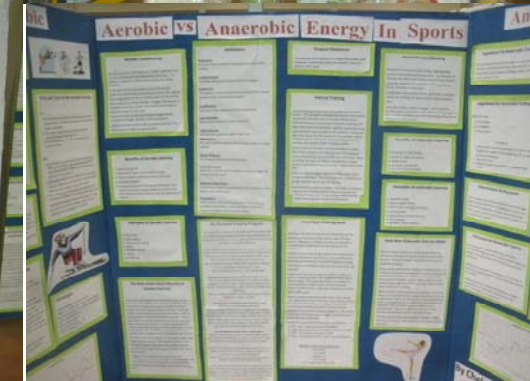
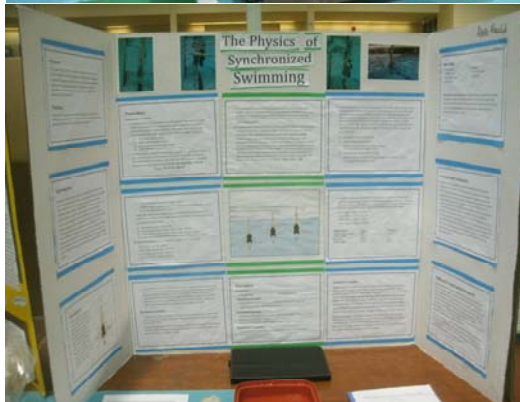
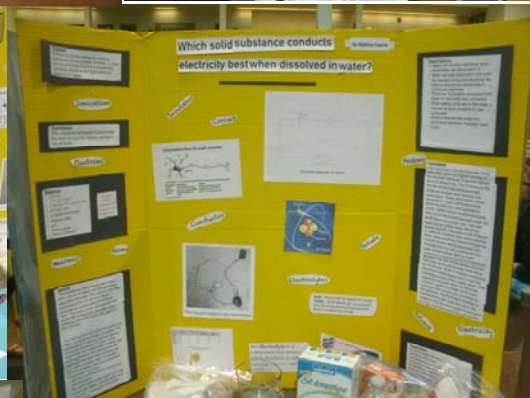
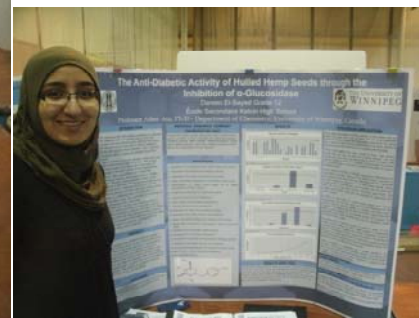
The student above is being interviewed by a team of judges. In her work, she developed a new way for a touch-screen to detect a fingertip. When mined sources of the elements used in current touch-screens run out, her way may be the best commercial option.

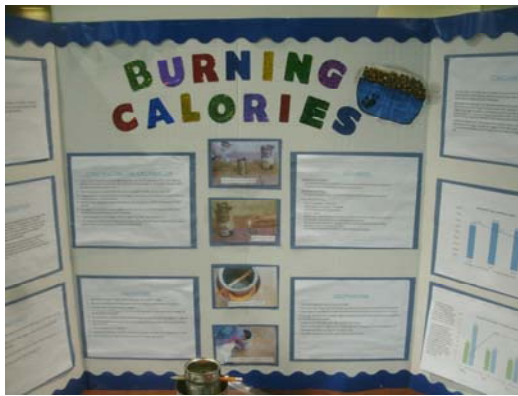




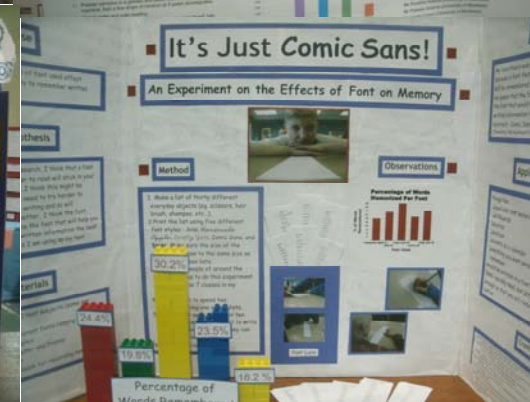
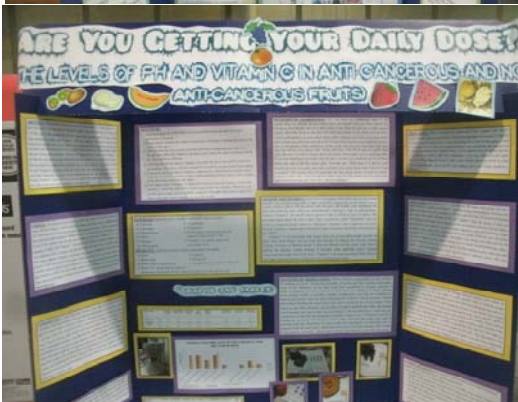
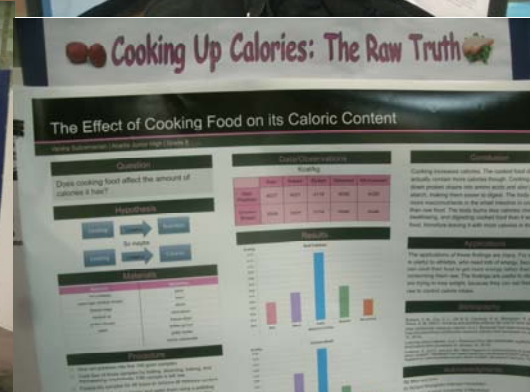
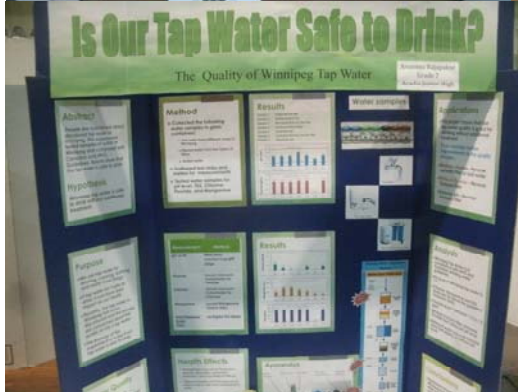
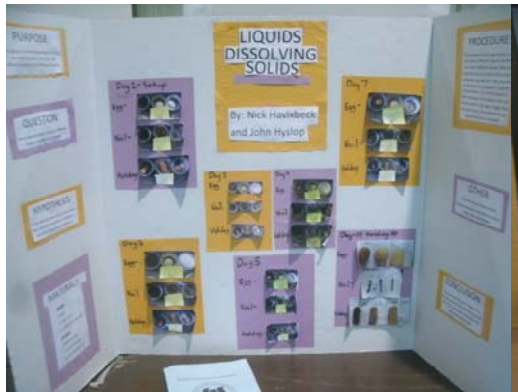


In the project at left, these junior high students applied heat to some snow, and studied the entropy of the results. They concluded that such warming could clear streets. Below are studies of electrolytes, and of the science of exercise.





More thought-provoking science projects.



## The Official Methods of Analysis, 19th Edition NOW AVAILABLE!!!

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The Official Methods of Analysis<sup>SM</sup>, 19th Edition (print), is now available for purchase. The print edition is a 2-volume set (hard cover bound books; not a subscription). Following are highlights in the new edition:

- 31 Methods adopted as First Action
  - 16 SMPRs developed and approved by AOAC stakeholder panels
  - 7 Methods with major modifications
  - 10 Methods with minor editorial revisions
  - 7 New appendices on guidelines for SMPRs, voluntary consensus standards, probability of detection, validation of microbiological methods for foods and environmental surfaces, validation of dietary supplements and botanicals, single-laboratory validation of infant formula and adult nutritionals, and validation of food allergens
  - A new subchapter on General Screening Methods (Chapter 17, subchapter 15) that includes screening methods for bacteria
  - Updated information on program components of the Official Methods<sup>SM</sup> process (found in the front matter)
- AOAC also offers the Official Methods of Analysis<sup>SM</sup> (OMA) online, which is an annual subscription and is a "continuous edition." New and revised methods are posted as soon as approved and ready which gives you the most up-to-date methods. AOAC offers several levels of online licenses to fit your needs as an individual or an organization, of any size.

For further information [click here](#) to visit AOAC's bookstore or to request a quotation contact AOAC Customer Service at [CustomerService@aoac.org](mailto:CustomerService@aoac.org).

Revision: March 19, 2013