

MINNESOTA ACADEMY OF SCIENCE

ANNUAL REPORT 2007-2008



Promoting Excellence in Science Since 1873



*Through educational programs
and professional development opportunities
— from elementary school through professional life —
the Minnesota Academy of Science supports Minnesota
scientists at every stage of their development, providing a
vital forum for scientific inquiry and discussion that reaches
thousands of Minnesotan students annually.*

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Message from the President

The 2007-2008 year was a time of transition and growth for the MN Academy of Science. The year began with the hiring of three exciting new staff members.

After years of diligent work by staff members, the Board felt that the Academy's financial status was stabilized and that the Academy could begin expanding our services. The first step in this process was to hire an Executive Director to focus on the mission and growth of the MN Academy of Science. Celia Waldock is an excellent choice for this position. Her background in non-profit management coupled with her ability to effectively grow organizations has already been an invaluable asset to our organization.



Lisè Weegman, a long-time volunteer with the State Science Fair and the Southeast Minnesota Regional Fair, took over as our Science Fair/Junior Science & Humanities Symposium program director. Lisè's professionalism made this transition smooth and very successful. The entire Board is excited about the excellent new ideas Lisè is bringing to these treasured programs.

Megan Buchanan joined the Academy as our first program coordinator for the Annual Meeting and Winchell Undergraduate Symposium. An event that has always had a strong annual volunteer committee will now have a new, long-term focus. We expect the Annual Meeting will undergo innovative changes in the upcoming year and are confident Megan will continue her excellent job coordinating this event. The Board and I wish to thank this year's planning committee and the faculty at Bethel College for their hard work on this year's 75th Annual Meeting of the MN Academy of Science held in conjunction with the 20th Winchell Undergraduate Symposium.

This year also saw the growth of the Science Quiz Bowl program. For the first time in our history, we were able to expand the program to include Middle School teams. Program director Barb Billington did a wonderful job initiating this new event and recruiting teams. After five years running the program, Barb has returned to school to pursue her doctorate degree. We will miss her very much and thank her for her superb service.

Finally, it has been my great pleasure to serve as the President of the MN Academy of Science for the past two years. I have been so pleased with the service and dedication of all of our volunteers, staff, teachers and parents. But most of all, I have been impressed with the scholarship provided by our students. The innovation and ingenuity I have witnessed from these students fills me with confidence that Minnesota will continue to be a world leader in science research and innovation.

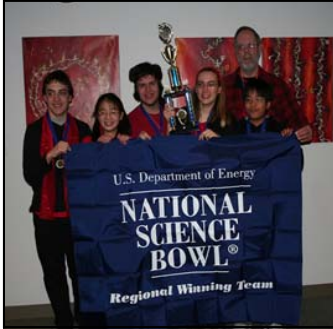
The following pages share photos and information about all of our programs. Additional photos are available on our website at www.mnmas.org.

We look forward to seeing you at our events in 2009!

A handwritten signature in blue ink that reads "William C. Bessler". The signature is written in a cursive style.

Dr. William Bessler
President

Science Quiz Bowl - High School



The Science Quiz Bowl is a fast-paced competitive event among teams of students who compete in a verbal forum to solve technical problems and answer questions in all branches of science and math.

The day began with a vigorous Round Robin competition between 30 groups of students. Congratulations to all the teams who were undefeated in the Round Robin: Burnsville Team 1, St. Paul Academy-Summit Team 1, St. Paul Central Team 1, St. Paul Central Team 2, and Washburn Team 1.

Twelve teams advanced to the Double Elimination round. After intense competition the top spots went to:

1. St. Paul Central Team 1, coached by Randy Knoche, won 1st place, a trip to Washington D.C. to compete in the National Science Bowl and \$1,000 for their school's science program.
2. Chaska Team 1, coached by Jim Lund, won 2nd place and \$750 for their school.
3. St. Paul Academy & Summit School Team 1, coached by Janice Gepner, won 3rd place and \$500.

For the second year in a row, Eric Koser's Mankato Team took home the Civility Award for their excellent sportsmanship.

Thank you to Wayne Wolsey and Macalester College for providing a great space for this competition. Thanks also to program director Barb Billington and a dedicated group of volunteer judges who kept the event running smoothly. And congratulations to all the incredible students who train so hard for this exciting event!

News from Nationals

At the National Science Bowl Competition, St. Paul Central defeated the school that won Nationals two years ago! We are very proud that they did so well and made it in to the top 16 teams to compete in the national Round Robin competition.

Congratulations!

Science Quiz Bowl - Middle School

Our first year producing the Middle School Science Quiz Bowl brought ten teams together for a spirited event. The Middle school students performed wonderfully, and every team took home at least one win in the Round Robin.

Four Teams made it to the Double Elimination Competition:

1. Mpls Field Community School Team 1, coached by Tracey Schultz, won 1st place and a trip to Washington D.C. to compete in the National Science Bowl.
2. Springfield Public Team 1, coached by Amanda Meyer, took 2nd place.
3. Mpls Field Community School Team 2, also coached by Tracey Schultz, won 3rd place.
4. Lake Harriet Community School (Upper Campus), Team 2, coached by Angie Riley won 4th place.



Congratulations to Springfield on winning the first Middle School Civility Award for their exemplary sportsmanship.

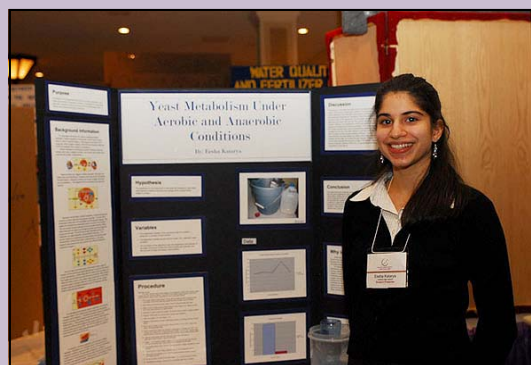
State Science Fair

The Academy's State Science Fair is an annual event that showcases Minnesota's best and brightest students in all fields of science. It is the culmination of regional Minnesota Fairs occurring throughout the state. Participants in the State Science Fair are in Junior or Senior High and compete by presenting projects and/or papers to a group of judges from various disciplines.

From approximately 2,500 regional participants, more than 450 students were selected to present at the Fair. Competition was intense with prizes including cash awards, trophies and medals, and national trips, as well as access to academic scholarships, internships, and other unique learning opportunities.

Congratulations to the students whose scholarship won them a place at the **International Science & Engineering Fair**:

- **Brandon Law**, Wayzata Senior High School
- **Emily Nimmer**, Breck School
- **Katie Baker & Emily Bodensteiner**, John Marshall High School
- **Marie Tate** (1st Alternate), Jackson County Central Senior High School
- **Atma Persaud** (2nd Alternate), Champlin Park High School
- **Brianna Droubie & Jill Hallin** (Team Alternate), Coon Rapids High School



For a complete list of Science Fair awards and recipients, visit our website at www.fair.mnmas.org

Congratulations also go to the **Seagate Rising Star** winners:

- **Riya Madan** (Junior High), Kellogg Middle School
- **Ari Klages-Mundt** (Senior High), Winona High School

The **Seagate Mentor Awards** this year went to two outstanding teachers:

- **Leila Youakim**, Coon Rapids Middle School
- **Roger Larsen**, Kellogg Middle School

Thank you to our committee volunteers: **Dr. Jennifer Bankers-Fulbright, Garrett Bitker, Gayle Bitker, Jim Fairman, Rosemary Fangel, Ruth Golda, Dr. Mary Beth Henderson, Dr. Jenny Hugstad-Vaa, Nancy Kolb, Mike Lohman, Penny Lohman, Karin Ostrand, Dr. Connie Pries, Gale Reller, Larry Schoenthaler, Mary Schoenthaler, Marie Storhaug, David Underbakke, Timara Underbakke, Celia Waldock, Mary Van Duynhoven, and Dale Weegman.** Their tireless hours and dedication to the State Science Fair have made this a successful event for all of our students and have inspired past participants to get involved in next year's planning events.

Thank you to our keynote speakers **Dr. John Najarian, Jane Casto** and our very special guest **Senator Amy Klobuchar.**

A very special thank you to all of the volunteer judges who gave so much time and energy to work with these amazing students.



Junior Science & Humanities Symposium

The Junior Science and Humanities Symposium (JSHS), held in conjunction with the State Science Fair, provides an opportunity for more than fifty students to present outstanding research papers to their peers and professional scientists. The event this year was expanded to provide a callback round for the top presentations. The callback judges had a very difficult time ranking the amazing presentations these students gave. At long last, they decided on the following top ten placements:

Advancing to National JSHS

- 1st place - **Kate Weegman**
- 2nd place - **Steve Trettel**
- 3rd place - **Daniel Mokhtari & Stephen Trusheim**
- 4th place - **Nicholas Derrico**
- 5th place - **Melody Hu**

Advancing to AJAS

- 1st place - **Michael Zaiken**
- 2nd place - **Madelaine Taft-Ferguson**
- 3rd place - **Brandon Law**
- 4th place - **Catherine Ishitani**
- 5th place - **Elaine Ayers**

Thank you to **Dr. John Najarian** for a very engaging keynote speech and for all his support throughout the event.

Thanks also go to all of our Breakfast with Scientist participants, our excellent judges, and our devoted volunteers who gave so much of their time and energy to provide our students with a first class educational event. And special thanks to **Garret Bitker** for stepping in to take over managing JSHS judges this year. The Academy could not offer the events we offer without volunteers like Garret.



News from Nationals

Out of 97 papers presented at the National Symposium, 18 winners are chosen in 6 categories.

- Congratulations to New Prague's **Stephen Trettel** who won 1st place and a \$16,000 scholarship!
- Congratulations to Winona's **Kate Weegman** who won 3rd place and a \$2,000 scholarship.
- Congratulations also go to Breck School's **Daniel Mokhtari and Stephen Trusheim** who won gift certificates for their poster presentation.

Lisè Weegman joins the MN Academy of Science

In the fall of 2007, Lisè Weegman joined the Academy as the director of the State Science Fair and Junior Science and Humanities Symposium. Lisè has been working on multiple aspects of the Southeastern Minnesota Regional Science Fair for many years. She joined the State Science Fair six years ago and has become an invaluable member, overseeing all aspects of the Display and Safety committee, as well as helping out in the State Science Fair office. She brings a great deal of experience from being both a parent of State Fair participants (Matt and Mitch 2007, Kate 2008), and a volunteer organizer of fair events.

Lisè is currently a faculty member at Dakota County Technical College and teaches in the Management Program, Business Division. She holds a B.S. in Business Administration/Marketing and is working on her Masters in Educational Leadership.

Thanks to Lisè (and her husband Dale) for their tireless work on this year's events!



Annual Meeting & Winchell Undergraduate Symposium

The Annual Meeting & Winchell Undergraduate Symposium provides an opportunity for professional scientists, undergraduates and graduate students to present original research to their colleagues in academia, industry, and government.

Our 2008 event was held at Bethel University. Thank you to the wonderful faculty and staff of Bethel who put together an exceptional event this year. Seventy-four posters and forty-one papers were presented in a wide range of categories. Abstracts of the research presented were published in Volume 71 of the Journal of the MN Academy of Science (available online at www.mnacadsci.org).

Best in Session awards went to oral presentations by:

- Joshua C. Speros (*Synthesis and Characterization of a Novel Polymerizable Chemiluminescent Compound*)
- Udochukwu Obodo (*Semaphorin Protein Expression in Mouse Thymus*)
- Eric R. Smith (*Biomass Production and Soil Nutrient Analysis in Restored Prairies*)
- Mayank Verma (*Partial Amelioration of the Phenotype Associated with DMD through an Increase in Vasculature*)
- Megan Schwitzer (*Comparison of Various Polarimetric Radar Rain Rate Estimators with Surface-Observed Rain Gauge Rain Rates*)
- Cory Lindh (*Demonstration of Remote Temperature Determination with a Novel Dual-Band IR Imaging Spectrometer*)

Special thank you to **Dr. Mark Rise** from Medtronic who gave a fascinating keynote speech on medical device use for neuro-modulation.



The 2009 event will be at St. Catherine's College in St. Paul. Submissions are being accepted until March 2009.

For more information go to www.mnacadsci.org.

Megan Buchanan hired as Program Coordinator

Megan Buchanan has joined the MN Academy of Science as our first program coordinator for the Annual Meeting & Winchell Undergraduate Symposium. Tasked with providing a multi-year focus and resource development, Megan will be working with the dedicated Annual Meeting Steering Committee we have in place.

Megan's background in non-profit administration and event management makes her an



Research & Engineering Apprenticeship Program

Each year, the Academy supports two high school students in research settings, giving them an opportunity to work with professional scientists on original research. The Research Engineering Apprenticeship

The 2008 REAP awards were given to:

- Nicole Dah On Lee
- Teresa Yang

Program (REAP) provides an opportunity to work in a research environment. These apprenticeships are designed to expand the students' background and understanding of scientific research, while motivating them toward a research career in science, mathematics or technology. The REAP scholars present their research at the Junior Science and Humanities Symposium the following year.

The Minnesota Academy of Science gratefully acknowledges the contributions that made our work possible this year. The following donors made contributions between July 1, 2007 and June 30, 2008.

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*We have made every effort to include the names of our contributors.
Please let us know if we have omitted your name or acknowledged you incorrectly.*

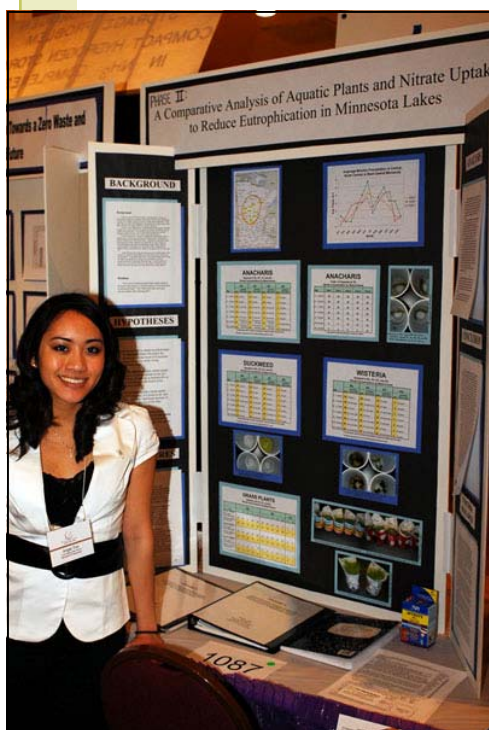
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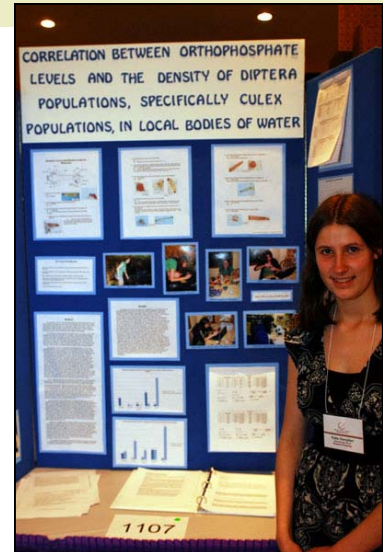
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**MN Academy of Science
Revenue & Expenses
July 2007 through June 2008**

Income	
Contributions Income	1,900
Grants	193,128
Membership	1,980
Other Income	3,493
Sales	1,960
Registrations	<u>74,479</u>
Total Income	276,940
Expense	
Administration	73,628
Program	<u>191,468</u>
Total Expense	265,096
Net Ordinary Income	11,844

*Thank you to all of the
volunteers who help us
create events that
inspire Minnesota
students to grow and
achieve their dreams.*

*We couldn't do it
without you!*

*To learn more about
how you can get
involved, visit our
website at
www.mnmas.org*

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tions, Curtin University, Australia*

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Dr. Rebecca Cowan-Hoye, *Macalester College*

Clark Erickson, *MN Department of Education*

Lois Fruen, *Breck School*

Patrick Hamilton, *Science Museum of MN*

Dr. Kathryn Hanna, *U of MN, Coll. of Bio. Sciences*

Dr. William Heidcamp, *American Univ. Sharjah, UAE*
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Nancy Kolb, *Uroplasty, Inc.*

Dr. Gordon MacFarlane, *Hill-Rom*
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Dr. Anthony Murphy, *College of St. Catherine*

Kamala Puram, *Pentair, Inc.*

Michael Schaefer, *Tennant Company*

Dr. Ned Tabat, *Seagate*

Dr. William Tolman, *University of MN*

Celia Waldock named as new Executive Director

Celia Waldock has joined the Academy as the new **Executive Director**. Her role will be working with the Academy Board and overseeing all of our programs, as well as helping to lead the Academy forward in improving and expanding science education opportunities in Minnesota.

Celia has a Master's Degree in Business Administration with a long history in non-profit management and a successful track record growing organizations. She also teaches business classes at the MN School of Business.

With energetic new leadership, we anticipate you will be excited to see how the Academy progresses in the next few years.



Staff

Celia Waldock, *Executive Director*

Barbara Billington, *Program Director, Science Quiz Bowl*

Megan Buchanan, *Program Coordinator, Annual Meeting & Winchell Undergraduate Symposium*

Lisè Weegman, *Program Director, State Science Fair and Junior Science & Humanities Symposium.*

Pat Strandberg, *Office Manager*

Joe Duca, *Website and Database Manager*

Transitions

The following Board Members completed their terms on the Board this year:

Clark Erickson **Patrick Hamilton** **Dr. Kathryn Hanna**

The MN Academy of Science wishes to thank them for their service to science education in Minnesota.