INTRODUCTION

Expanding Your Horizons (EYH) is a one-day conference held annually at the University of Wisconsin-Madison (Appendix A - 2014 flier). EYH provides opportunities for middle school aged girls to explore careers that use math and science. Each year, up to 350 students from south-central Wisconsin participate in hands-on career sessions and have the chance to talk with women who work in careers that require a background in math, science, or engineering.

The objectives of the EYH conference are to:

- Increase the interest of young women in science, technology, engineering, and mathematics through positive, hands-on experiences
- Foster awareness of career options in math- and science-related careers
- Provide young women with opportunities to meet and interact with positive role models who are active in math- and science-related careers
- Involve young women who have limited opportunities for success in positive experiences in mathematics, science, and engineering

This report summarizes the conference history and purpose. It also provides details about the 2014 planning process, participants, program, evaluation, and financial status. The report concludes by identifying future plans for EYH.

HISTORY & PURPOSE: THE NEED TO EXPAND HORIZONS

For over 50 years, Madison-area educators and community members have sponsored events designed to support and encourage young women’s interest in math and science. In 1959, the UW-Madison chapter of Sigma Delta Epsilon - Graduate Women in Science held the first one-day workshop that brought together high school students and scientists for career-related discussions and activities. In 1981, the career day planning committee joined the Math/Science Network (expandingyourhorizons.org), a national, non-profit organization that promotes the education and professional advancement of girls and women in math, science, and technology. Among its endeavors, the Network supports Expanding Your Horizons in Science and Math conferences for 6th through 12th grade girls nationwide. Members receive materials and technical assistance from the Network. Local affiliation with the national EYH effort has helped enhance the conference with informative materials and innovative programming.

Are EYH conferences still needed in the 21st Century? YES! Although more women enter traditionally male-dominated occupations and have better opportunities than ever before, women are still underrepresented in many math/science fields. The Math/Science Network reports that by next year, two out of three new entrants to the labor force will be women, but women currently only comprise 16% of the science and engineering workforce. In fact, even though women earn over one-half of all bachelor's degrees awarded, only one-fourth of those are in natural science and engineering. Specifically, women earn only 17.5% of undergraduate engineering degrees, and only 18% of physics degrees; and although women earned 37% of undergraduate computer science degrees in 1985, they earned only 29% in 1994. According to the Math/Science Network, news at the pre-college levels is also disturbing. For instance, half the
girls in grades 5 through 8 say they will take only those math courses required to graduate from their public schools. In addition, 30% of high school girls report they have been advised against taking senior-level math.

Granted, there are no easy explanations for statistical trends. Nevertheless, young women need encouragement to study math and science so they can keep their options open. The nation’s future depends on a diverse workforce with high-level math, science, and technical abilities. By providing information, role models, activities, and first-hand experiences in the workplace, EYH helps young women identify the rewarding career options open to them if they keep their math and science interests alive.

PLANNING PROCESS: A COMMUNITY-WIDE COLLABORATION

The Madison EYH conference results from a yearlong planning process that relies on collaboration among people in academia, businesses and non-profit groups.

**EYH Planning Committee.** The Committee is made up of representatives from the conference sponsors, which include UW-Madison, Edgewood College, Madison College and other community organizations (see Appendix B). Committee members have a wide variety of backgrounds, including K-12 and college education, scientific research, business management, organization directorship, and parenting. The common thread uniting the committee is the belief in the importance of keeping girls interested in math and science along with introducing them to available career opportunities.

**Conference Sponsors.** The EYH conference could not take place without generous contributions from academic, community, and corporate sponsors (see Table 1 and Appendix D). Their assistance is greatly appreciated, both through financial donations and by in-kind contributions of employee time to serve on the committee and to present career sessions at EYH conferences.

**Table 1.  2014 EYH Contributors — financial and in-kind**

**Ph.D. Degree – $2500 and above**
Google Inc., Madison Office

**Bachelor’s Degree – $1000-$1999**
College of Letters and Science, UW-Madison

**Associates Degree - $500-$999**
Heather Daniels and Alan Hiebert
MRSEC, College of Engineering, UW-Madison
School of Veterinary Medicine, UW-Madison
School of Medicine and Public Health, UW-Madison

**High School Diploma - $100-$499**
Edgewood College
Provost Office, UW-Madison
School of Human Ecology, UW-Madison
School of Pharmacy, UW-Madison
Below $100
AAUW Watertown Chapter
Brian Yandell and Sharon Lezberg
Jeff Maki

In Kind Contributors
Edgewood College
Graduate Women In Science-Sigma Delta Epsilon
Madison Metropolitan School District
Morgridge Institute for Research
Mt. Mary College
University of Wisconsin-Madison
  Department of Bacteriology
  Biotechnology Center
  Department of Chemistry
  Department of Geoscience
  UW Geology Museum
  ICTR
  MRSEC
  Neuroscience Training Program
  Secretary of the Academic Staff
  Undergraduate Academic Awards Office

These contributions helped cover major costs such as equipment rental, transportation, printings, mailings, and information packets (Appendix G). Additionally sponsors donated in-kind supplies and services. Because of the generous community-wide support, the registration fee for the daylong conference continues to stay at a reasonable rate--$35 per person.

PARTICIPANTS: A DIVERSITY OF BACKGROUNDS

Participants in the 2014 EYH conference included young women in 6th, 7th and 8th grades, the conference presenters, and the conference group leaders. Deliberate steps were taken to reach and represent participants from a diversity of ethnic, racial, economic, academic, and employment backgrounds.

Table 2. 2014 EYH Student Participants

<table>
<thead>
<tr>
<th>Category</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Attendees</td>
<td>367</td>
</tr>
<tr>
<td>Schools Represented</td>
<td>73</td>
</tr>
<tr>
<td>Full Scholarships Awarded</td>
<td>44</td>
</tr>
<tr>
<td>Partial Scholarships</td>
<td>35</td>
</tr>
</tbody>
</table>

EYH continues to be an extremely popular event. In 2006, the conference size was increased in response to the large number of registrants. Those who attended spend the day in small groups of about 12-14 that have two volunteer undergraduate leaders.

Appendix C shows that participants attended from 58 communities and 61 different schools. Most students came from south-central Wisconsin however a growing number of participants are
traveling over an hour to the conference. Sixty-seven students (22%), came from Madison. Several communities sent fairly large groups of participants: Adams-Friendship, 26; Neenah, 29. The number of participants from outlying areas suggests an increased interest from more communities to guide girls into post-secondary education and careers.

It has always been a priority of the Planning Committee to recruit minority, low-income, and disadvantaged students. The 2014 conference had thirty-eight students self-identify as non-Caucasian. The enrollment for this group represents a steady percentage of registrants who are non-white over the past several years—20% in 2011, 14% in 2012, 13% in 2013, and 17% in 2014.

A variety of methods were used to recruit students and publicize EYH in south-central Wisconsin:

- Brochure sent to all public and private south-central Wisconsin schools with 6th, 7th and 8th graders; also sent to math/science teachers, guidance counselors, gifted/talented coordinators, diversity directors, principals;
- Announcements through University Communication;
- Press release to Madison media;
- Email sent to home school groups listed on the Internet.

**Conference Presenters.** The EYH conference could not take place without another important group of contributors: the career session presenters. This year, *fifty-nine professional women* (see Appendix D) generously volunteered their time, shared and demonstrated their expertise, and served as outstanding role models for the conference participants. It is through interaction with these presenters that the participants truly “expanded their horizons.”

**Group and Activity Leaders.** Another aspect critical to the success of the conference is our group and activity leaders. All of them are students from UW-Madison, Edgewood and MATC who volunteered to spend the conference day working with the girls and attending different career sessions. The group and activity leaders’ role requires them to use tact, wise judgment, and nurturing skills to make the conference an enjoyable and educational experience for participants. During the day, EYH participants worked in small groups, each made up of 12 to 14 girls. The group leaders conducted getting-acquainted activities, accompanied the groups to the career sessions and lunch, and shared their own educational and work experiences. Also, college student volunteers conducted the closing activity including a question-and-answer session. Without their commitment to be role models for the girls, EYH would cease to exist.

**PROGRAM: A DAY OF INTERACTION & INFORMATION**

The EYH conference offers a full day of programming for students which is designed to allow each participant to attend two career sessions, as well as an opening session and a closing science activity (see Appendix E - Student Schedule). Career sessions allow the girls to interact with women working or studying in a career area, both on campus and at work sites around Madison.

When they register, the girls identify three career areas they want to know more about. They are assigned to small groups based on these career interests. These groups stay together throughout
the day, with their group leaders. Ideally each girl learned about at least one career area in which she was already interested, and at least one she had never thought about.

Through the process of assigning each girl to a session that she did not select, she is able to “expand her horizons”. Evaluations show that this has a positive affect on many girls. For example, in 2005, only 10% of girls selected the Engineering track as their first or second choice of career sessions to attend. By comparison, Veterinary and Animal Science was selected by 57% of girls. However, engineering sessions as a whole received the highest overall rating (6.5 out of 7) by the girls attending those sessions. It seems that girls thought they wouldn’t like engineering but once they saw how engineering could be applied in the real world, they enjoyed it.

Students also had a chance to interact with their peers through a get-acquainted activity and a collaborative group activity. A packet of materials to read at home provided the girls with more information about the importance of math and science in many career areas.

EVALUATION: STRENGTHS & OPPORTUNITIES

The EYH participants rated their conference experiences very highly. All participants—students, group leaders, and presenters—fill out evaluation forms.

Students overwhelmingly liked the career sessions most of all. When asked to list, in general, what they liked best, some of their responses included:

- Learning more about science as a job.
- I learned about so many new opportunities.
- It was super fun and interesting!
- I liked that we got to learn what a few different careers looked like.

Evaluations from the majority of the volunteers, group leaders, and presenters showed they enjoyed the day and would recommend the experience to a friend. Many have already volunteered to return for EYH 2014.

See Appendix F for a summary of the evaluation results. As always, the Planning Committee uses feedback from the evaluations to improve the program for the next conference.

FINANCIAL STATUS

Appendix G provides an Income and Expense Report. The numbers do not include the variety of in-kind donations provided by volunteers, including materials used in career sessions and handed out to participants. Registration income covers only about half the cost of the program; financial donor support is essential to keeping EYH an affordable opportunity for students.
LIST OF APPENDICES

A. 2014 EYH Brochure

B. Planning Committee

C. Schools and Communities

D. Career Session Presenters

E. Student Schedule

F. Summary of Evaluations

G. Financial Report
The Expanding Your Horizons Conference: A Day of Career Exploration Activities in Science, Engineering, and Mathematics for Young Women in Middle School

For registration information, go to www.eyh.wisc.edu

Registration deadline: October 24

EXpanDing Your HorizOns

Why EYH?

Are you a GIRL in GRADES 6, 7 or 8 who is thinking about your future? Are you unsure about what careers are out there? Do you like games and puzzles, computers, or working with your hands? Are you interested in nature, the environment, or health? Do you wonder about the stars above you or the earth beneath your feet? Do you enjoy math and science? You are not alone!

Middle school girls come to Expanding Your Horizons conferences nationwide to learn about the wide range of career options for women in science, engineering and math. Through hands-on workshops and visits to work places, they find out what it’s like to work in different careers. Student participants have a chance to interact with professional women who work in a variety of fields. And they have a chance to meet other girls who share their interests.

Here’s what past student participants said about their Madison EYH experience.

- You get to enjoy science.
- Overall I love meeting new people and this was a very fun experience.
- It made me realize what I want for my future.
- I recommend this to every girl out there.
- EYH made me think of science in a new way.
- Best day yet this year!

You will spend your day at the EXPANDING YOUR HORIZONS conference with a group of girls who share your interests. Your group will have college student leaders, and with your group you will participate in three different career exploration activities.

These active sessions will be led by women from universities, technical colleges and businesses and will give you a chance to try out some of the skills needed for success in a particular career. You might be able to see how researchers detect cancer cells or learn how web pages are constructed or learn how to design the inside of a building!

You will end the day with an activity where you can experience science in action!

Conference Schedule

9:30-10:00 Registration – check in and meet your group (Varsity Hall, Union South)
10:00-10:30 Get Geared up for EYH
Locations for career exploration activities vary and may be held on- or off-campus sites.
Transportation to off-campus sites is provided.
10:50-11:40 Career Exploration Activity 1
12:00-12:30 Lunch (provided)
12:50-1:40 Career Exploration Activity 2
2:00-2:50 Career Exploration Activity 3
3:10-4:20 Science in Action Activity
4:20-4:30 Conference Wrap-Up
APPENDIX B
EXPANDING YOUR HORIZONS
PLANNING COMMITTEE
2014

Co-Chairs
Heather Daniels, Graduate School, UW-Madison
Marwa Bassiouni, School of Medicine and Public Health, UW-Madison
Mallory Musolf, School of Medicine and Public Health, UW-Madison

Members
Lynn Diener, Mount Mary College
Anne Lynn Gillian-Daniel, Biochemistry Department, UW Madison
Kelly Harris-Johnson, Biochemistry Department, UW Madison
Kathy Huncosky, Madison Metropolitan School District
Dolly Ledin, Center for Biology Education, UW-Madison
Brooke Norsted, UW Geology Museum, UW-Madison
Amy Schiebel, Natural Science Department, Edgewood College
Juli Speck, Department of Natural Resources, State of Wisconsin
Louise Stracener, Natural Science Department, Edgewood College
Julie Stubbs, Office of Undergraduate Academic Awards, UW-Madison
APPENDIX C

EXPANDING YOUR HORIZONS 2014
STUDENT PARTICIPANTS’ SCHOOLS AND COMMUNITIES

Total Number of Registered Participants: 367
Number of Schools Represented: 73

Number/Community/School Name

38 – Neenah, Shattuck MS
36 – Madison
  8 – O’Keefe
  6 - Cherokee
  6 - Blackhawk
  4 – Toki
  3 – Hamilton
  2 – Whitehorse
  2 – Sherman
  1 – Wright
  1 – Edgewood
  3 – Spring Harbor
  1 – Blessed Sacrament

27 – Edgerton, Edgerton MS
22 – Cottage Grove, Glacial Drumlin MS
22 – Watertown, Riverside MS
20 – Ripon, Ripon and Catalyst MS
19 – Verona (14) Savannah Oaks MS
  (4) Badger Ridge (1) Core Knowledge
18 – Adams, Adams-Friendship MS
15 - Middleton, Kromrey MS
13 – Clintonville, Clintonville MS
9 – McFarland, Indian Mound MS
9 – Cambridge, Nikolay MS
7 – Sun Prairie MS, (3) CHUMS (2) Patrick
Marsh, (2) Prairie View
7 – Cumberland, Island City Academy
6 – Mount Horeb, Mount Horeb MS
6 – Montello, Montello MS
6 – Marshall, Marshall MS
6 – Jefferson, Jefferson MS
5 – DeForest, DeForest MS
4 – Poynette, Poynette MS

4 – Rosholt, Rosholt MS
4 – Belleville, Belleville MS
3 – Granpton, Granpton MS
3 – Oregon, Oregon MS
2 – Columbus, Columbus MS
2 – Albany, Albany MS
2 – Evansville, J.C. McKenna MS
2 – Waukesha, Horning MS
2 – New Glarus, New Glarus MS
2 – Orfordville, Parkview MS
2 – Reedsburg, (1) Sacred Heart, (1) Webb
2 – Janesville, (1) Franklin MS, (1) St Pauls
2 – Merrill, Merrill Prairie River MS
2 – Stoughton, River Bluff MS
2 – Black Earth, Wisconsin Heights MS
2 – Beaver Dam Intermediate, Beaver Dam
1 – Germantown, Kennedy MS
1 – Dodgeville, DMS
1 – Waupaca, Waupaca MS
1 – Wausau, Horace Mann
1 - Milton, Northside Intermediate
1 – Milwaukee, Milwaukee Parkside
1 – Rhinelander, James Williams
1 – Pardeeville, Pardeeville MS
1 – Pewaukee, Horizon MS
1 – Livingston, Iowa Grant Elementary
1 – Greendale, Greendale MS
1 – Burlington, Randall Consolidated
1 – Neosho, Neosho Elementary
1 – Beloit, Turner MS
1 – Sheboygan Falls, Sheboygan Falls MS
1 – Johnson Creek, Johnson Creek MS
1 – Fort Atkinson, Fort Atkinson
1 – Freedonia, WVL
1 – Cedarburg, Webster Transitional
APPENDIX D
EXPANDING YOUR HORIZONS
CAREER SESSION PRESENTERS

2014

- Anna Hausmann, Animal Science, University of Wisconsin-Madison
- Laura Hernandez, Animal Science, University of Wisconsin-Madison
- Wendy Newton, Animal Science, University of Wisconsin-Madison
- Amanda Pike, Animal Science, Comforts of Home Veterinary Services
- Christy Stewart, Biology, USDA-ARS/University of Wisconsin-Madison
- Anna Baker, Biology, University of Wisconsin-Madison
- Xiao Rao, Biology, University of Wisconsin-Madison
- Karla Esquilin, Biology, University of Wisconsin-Madison
- Joyce Robertson Hoyt, Biology, Monsanto Company
- Harisha Rajanala, Biology, University of Wisconsin-Madison
- Christelle Guedot, Biology, University of Wisconsin-Madison
- Michelle Marks, Biology, University of Wisconsin-Madison
- Brittany Jacobs, Biology, University of Wisconsin-Madison
- Alejandra Huerta, Biology, University of Wisconsin-Madison
- Amy Jancewicz, Biology, University of Wisconsin-Madison
- Julia Nepper, Biology, University of Wisconsin-Madison
- Maria Garcia, Biology, University of Wisconsin-Madison
- Laura Bond, Biology, University of Wisconsin-Madison
- Johanna Oosterwyk, Biology, University of Wisconsin-Madison
- Dawn Davis, Biology, University of Wisconsin-Madison
- Katelyn Heimbruch, Biology, University of Wisconsin-Madison
- Jessica Heckman, Biology, Edgewood College
- Sally Floyd, Biology, Promega Corporation
- Kristen Murfin, Biology, University of Wisconsin-Madison
- Katie Yang, Biology, University of Wisconsin-Madison
- Vy Tran, Biology, University of Wisconsin-Madison
- Penny Johnson, Computer Science, Madison Area Technical College
- Emily Gember, Computer Science, University of Wisconsin-Madison
- Tatum Mortimer, Computer Science
- Atreyee Sinha, Computer Science, University of Wisconsin-Madison
- Amanda Ochsner, Computer Science, University of Wisconsin-Madison
- Karissa Tilbury, Engineering, University of Wisconsin-Madison
- Karen Dunn, Engineering, University of Wisconsin-Madison
- Xiaochen Xian, Engineering, University of Wisconsin-Madison
- Val Blair, Engineering, University of Wisconsin-Madison
- Stephanie Thomson, Strand Engineering
- Carrie Francis, Engineering, University of Wisconsin-Madison
- Robin Lawson, Engineering, Lumen Electronic Jewelry
- Jenni Kempf, Environmental Science, University of Wisconsin-Madison
• Jean Bahr, Environmental Science, University of Wisconsin-Madison
• Abbie Moilien, Environmental Science, Ken Saiki Design
• Elise Uphoff, Environmental Science, Wisconsin Department of Agriculture
• Lynn Diener, Environmental Science, Mount Mary University
• Aayushi Uberoi, Health and Medicine, University of Wisconsin-Madison
• Carissa Philippi, Health and Medicine, University of Wisconsin-Madison
• Morgan Shields, Health and Medicine, University of Wisconsin-Madison
• Dorian Liem, Health and Medicine, University of Wisconsin-Madison
• Eliza Blanchette, Health and Medicine, UW Hospital and Clinics
• Anna Barker, Health and Medicine, University of Wisconsin-Madison
• Kathleen Ley, Math, Norback Ley LLC
• Joliene Lindholm, Physical Science, University of Wisconsin-Madison
• Breana Hashman, Physical Science, University of Wisconsin-Madison
• Melissa Breeden, Physical Science, University of Wisconsin-Madison
• Katie Hurley, Physical Science, University of Wisconsin-Madison
• Susan Nossal, Physical Science, University of Wisconsin-Madison
• Claire Murray, Physical Science, University of Wisconsin-Madison
• Melanie Day, Physical Science, University of Wisconsin-Madison
• Gabrielle McPherson, Physical Science, University of Wisconsin-Madison
• Diane Walters, Physical Science, University of Wisconsin-Madison
APPENDIX E
EXPANDING YOUR HORIZONS
STUDENT SCHEDULE
2014

9:30-10:00  Registration – check in and meet your group
            2nd Floor, Union South, Varsity Hall

10:00-10:30  Get Geared up for EYH

10:50-11:40  Career Exploration Activity 1

12:00-12:30  Lunch (provided)

12:50-1:40   Career Exploration Activity 2

2:00-2:50    Career Exploration Activity 3

3:10-4:20    Science in Action Activity

4:20-4:30    Conference Wrap-Up
Student Participants

From the Pre-Conference Survey

The students selected phrases to answer the question “What are the most important things for you to know about a job?” This is how they ranked what they wanted to know:
1 – That it is fun (69%)
2 – That I can do it and have a family (60%)
3 – How hard it is (53%)
4 – How to prepare for it/education needed (47%)
5 – What a normal day is like/daily tasks (44%)
6 - How much money you make (20%) How hard it is (21%)

Comparing Pre- and Post-Conference

Students were asked to rate their interest in taking courses in high school in seven areas (math, computers, biology, environment, physical science, engineering, health/medicine). In the majority of the areas, the post-conference evaluations reflected increases to the option “I want to take as many classes [in this subject area] that I can”. The largest uptick was in biology where there was a 6% increase and environment came in second with a 4% increase. The largest trend, however, was for this question to go unanswered in the post-conference surveys perhaps indicating more indecision on part of the participants.

We also asked on the pre and post evaluations about participants’ interest in particular career areas. All career areas showed an increase of interest from the beginning to the end of the conference. The changes were as follows: Math (2%), Computers (1%), Biology (8%), Environment (2%), Physical Science (3%), Engineering (3%), Health and Medicine (3%).

The students were asked in both pre- and post-conference surveys "After high school, what kind of education do you plan?" Their answers:

<table>
<thead>
<tr>
<th>Option</th>
<th>0 % pre-conference</th>
<th>0% post-conference</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>I don't know yet</td>
<td>13%</td>
<td>12%</td>
</tr>
<tr>
<td>Technical College (2-year degree)</td>
<td>3%</td>
<td>4%</td>
</tr>
<tr>
<td>College (4 year degree)</td>
<td>33%</td>
<td>24%</td>
</tr>
<tr>
<td>Professional Degree (more than 4 years)</td>
<td>43%</td>
<td>40%</td>
</tr>
</tbody>
</table>

Other data from the survey:
• 79% said they learned about some new careers
• 58% said they would recommend EYH to a friend.

**Group Leaders**
The undergraduate student group leaders gave helpful narrative feedback on the post-conference surveys. Collectively they rated career session one a 5.74 (out of 7), career session two 6.31 (out of 7) and career session 3 a 5.83 (out of 7).
APPENDIX G
EXPANDING YOUR HORIZONS
CONFERENCE FINANCIAL REPORT
DECEMBER 2014

Income

Carry over from 2013 $7282
Registrations 10,179
Donations:
  Google Inc. Madison 3000
  Edgewood College 350
  UW-Madison—Letters & Science 1200
    School of Medicine and Public Health 500
    MRSEC 500
  Provost Office 175
  Human Ecology 250
  Veterinary Medicine 500
  Pharmacy 250

Total Income $24,186

Expenses

Planning Retreat $200
Brochure/copies 943
Background Checks 864
Wisconsin Union (food & av) 4416
Insurance for participants 118
Presenter training 720
Promotion/recruitment (bulk mail) 315
Science Activity & Group Leader supplies/training 555
Supplies and fees 486
Transportation 1725
Conference mementos/t-shirts for group leaders 2362
Conference Data Entry 275
Registration Fee Refund 144
Bank Fees-Returned Checks 30

Total Expenses $13,153

Total Cash On Hand $11,033