the pipet

Binghamton
ACS Local Section
75th Anniversary

December 2016
2016 Binghamton Local Section

Executive Board

Chair: Alexa Silva
Chair-Elect: Megan Fegley
Immediate Past Chair: Daniel Brennan
Secretary: Alison Sheridan-Brennan (2016-2016)
Treasurer: Elizabeth Brown (2014-2016)
Members-At-Large: Mary Bridge (2015-2017)
Fred Johnson (2014-2016)
Gwen Lubey (2014-2016)
Maurice Odago (2016-2016)

Graduate Student Liaison: Stephen Ambrozik
Hannah Cronk

Committee Chairs

Chemistry Olympiad: Mary Bridge
Science Olympiad: Christof Grewer
You be the Scientist Challenge: Daniel Brennan and Alison Sheridan-Brennan
National chemistry Week: Yan Sun
Chemist Celebrate Earth Day: Megan Fegley
Webmaster: Daniel Brennan
The Pipet Editor: Rebecca Kissling
75 Years of Service

1941 – ACS Council approves charter, 1st dinner meeting on November 1941
1942 – We reached 60 members
1947 – Triple Cities College is formed → Harpur College → SUNY Binghamton
1955 – First Student Awards Dinner
1966 – 25th Anniversary – 250 members
1976 – 100th Anniversary of National ACS, Chemistry Week in City of Binghamton
1984 – Johnny Hart created “The Wiz” for NERM
1986 – Section hosts NERM XVI (C.E. Myers, Chair)
1987 – Chemistry Olympiad and National Chemistry Week
1990 – Science Olympiad
2004 – Chemist Celebrates Earth Day
2006 – Section hosts NERM 2006 (W.E. Jones, Chair)
2016 – You be the Chemist Challenge
2016 – Section hosts NERM 2016 (W.E. Jones, Chair)
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# PAST OFFICERS OF THE BINGHAMTON SECTION


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Chairs of the Binghamton Section
The Third 25 Years 1990-2016

2016 - Alexa Silva
2015 - Daniel Brennan
2014 - John Dudek
2013 - Diana Simpson
2012 - Harold Trimm
2011 - Nikolay Dimitrov
2010 - Diana Simpson
2009 - Elizabeth Brown
2008 - Alexa Silva
2007 - Edmond O. Fey
2006 - Susan M. Young
2005 - Omowunmi A. Sadik
2004 - Anita Sargent
2003 - Diana Simpson
2002 - Sudipta Chatterjee
2001 - Wayne Jones
2000 - Warren L. Gulden
1999 - Karl A. Wilson
1998 - Mark D. Poliks
1997 - Michael J. Costello
1996 - Michael E. Starzak
1995 - Clifford E. Myers
1994 - Warren L. Gulden
1993 - Logan L. Simpson
1992 - Anna L. Tan-Wilson
1991 - M. Stanley Whittingham
1990 - Albert Levit
A Brief History of the Binghamton Local Section
Wayne E. Jones, Jr., Councilor

New York State has been at the center of the American Chemical Society since its creation at the College of Pharmacy of the City of New York on April 6, 1876. Growing rapidly from the initial 35 signatories, the ACS now represents over 158,000 members in the U.S. and around the globe. It is the largest scientific society in the world. Chartered by the US Congress, the Society has a unique organization that represents geographic diversity in Local Sections and technical divisions in which the disciplinary foci of members can be represented.

In 1930, the ACS had grown to 18,206 members with 83 local sections. 11 years later, in 1941, building on the strength of the growing chemical industry that had developed around leather tanning and the shoe industry, the Binghamton Local Section of the ACS was founded. Contributing to technologies ranging from plastics, transistors, and personal care products, to film technology that was used in the landing on the moon, Chemistry has had a significant presence in the Binghamton community for the past 75 years.

In the 1970’s, the growing electronics industry and the university took a lead in the growing Binghamton local section. In 1986, we hosted the first American Chemical Society Northeast Regional Meeting (NERM) in Binghamton chaired by Professor Cliff Myers of Binghamton University, bringing over 400 chemists to the Binghamton Community. NERM would be held again in 2006 and most recently in 2016 growing to more than 930 attendees. The local section became more active in the 80’s and 90’s in the area of community outreach. Partnering with SUNY Broome, Hartwick College, SUNY Oneonta Binghamton University, and local industry, the section supported awards for graduating seniors and graduate students. Awards were also introduced to recognize teaching, research, and volunteerism in the section. We also began working more closely with area schools introducing the Chemistry Olympiad, Science Olympiad, National Chemistry Week, Chemists Celebrate Earth Day and more recently the You be the Chemist Challenge.

Today, chemistry and the related chemical sciences remain an important part of the Binghamton community. With the support of a committed group of volunteers, this “small” local section of 170 members continues to provide leadership in support of the ACS mission. “Improving People’s Lives, Through the Transforming Power of Chemistry.”
2016 in Review

Our Section had a busy and successful year!

We started the celebration of our 75th year with the launch of our new website (http://binghamton.sites.acs.org/) and a new email (LocalACS@binghamton.edu).

Our other events were:

**Science Olympiad**
The first event of the year was the Science Olympiad on February 2nd at Binghamton University. We’ve hosted this event since 1987! High School students from local schools come together to compete in several science events. Prof. Grewer from Binghamton University was the general coordinator for this year. We had 16 local high schools competing in 20 different events, more than 50 volunteers helped to make this event a success!

![Student from Union-Endicott High School performs an experiment in the event “Food Chemistry”](image_url)
Students from Maine-Endwell High School perform in a tech event.

Another student performing a titration for the Chemistry Event.

Our volunteers make it all possible!
Social Events – The Chemistry of Baking!

On March 2\textsuperscript{nd}, Dr. Turnpenny organized a visit to “Chroma Café and Bakery” where we had a lecture on the science of baking, it was a delicious evening!

![Demonstration and tasting of baked goods at Chroma.](image1)

You be the Chemistry Challenge

On March 5\textsuperscript{th} Prof. Brennan hosted 30 middle school students at Binghamton University for a chemistry knowledge competition. It was the first time that we ran this event and it was rewarding to see the excitement of the middle school students as they progressed through the stages of the competition. 10 students qualified for the state level competition.

![Students used a classroom response system to answer multiple answer type questions.](image2)

The top 10 students qualified for the state round of the competition.
Chemistry Olympiad
We continue our tradition to host the Chemistry Olympiad. Ms. Bridge coordinated this year event at Binghamton University. The Local competition was on March 18th and the National Competition was on April 22nd.

The top two students received their awards at the Annual Awards Dinner in May.

Chemists Celebrate Earth Day
Dr. Fegley coordinated the “The Great Indoors – The Home Ecosystem” K-12 Poem Contest. The illustrated poems were displayed at the Science II Hall on Earth Day, April 22nd. More than 60 people voted on the best poem for each age group and the 1st place of each category was sent to ACS to compete in the National competition. Jenna Holleran from Tioga Hills Elementary School won the first place on the K-2 category.

Jenna Holleran, 1st Grade from Tioga Hills Elementary School
Awards Dinner
Our 2016 Awards Dinner was at the ITC Center at Binghamton University. We recognized achievements from students and professionals from our region. Professor Whittingham (Distinguished Professor, Chemistry and Materials Science & Engineering at Binghamton University and Director, NorthEast Center for Chemical Energy Storage) was our speaker, his talk was "Batteries: From Como to 2022 (from frogs to vehicles)"

M. S. Whittingham, Distinguished Professor, Chemistry and Materials Science & Engineering at Binghamton University and Director, NorthEast Center for Chemical Energy Storage

Awards Dinner Recognition List

High School Chemistry Olympiad Honors

Maine-Endwell High School, Richmond Watson, Teacher
Ryan Klein & Max McCarthy

Morris Central High School, Vidya Nagarur, Teacher
Jaser Iniguez & Brent Wist

Seton Catholic Central High School, Diana Simpson, Teacher
Yunting Fang & Daniel Powell

Union-Endicott High School. Stephen Tibensky, Teacher
Miles Allen & Elizabeth Sladish

Vestal High School, Stephanie Lewis, Teacher
Eamon Reynolds & Haashim Shah (High School Chemistry Olympiad-High Honors)
Drs. Mary & Henry Paul Scholarship  Alexandra Thompson, Greene High School  Jake Klockowski, Norwich High School

ACS Undergraduate Travel Awards  Megan Douglass & Samantha Gillingham, Hartwick College
ACS Graduate Travel Awards  Hannah Cronk & Zakiya Skeete, Binghamton University

Outstanding Undergraduate, Senior Chemistry Major

Steven Burnette, SUNY Broome  Megan Van der Horst, Hartwick College  Benjamin Hultman, SUNY Oneonta  Fang Lin, Binghamton University

Zappert Award for Outstanding, Graduating Ph.D. Student, Binghamton University  Chunyu Wang, Advisor: Jiye Fang

- 2015 National Chemistry Week - Alison Sheridan-Brennan, SUNY Broome
- 2016 Earth Day Coordinator - Megan Fegley, Binghamton University
- 2016 NYS Science Olympiad Division C Regional Coordinator, Christof Grewer, BU
- 2016 Local and National Chemistry Olympiad Coordinator, Mary Bridge, BU
- 2016 You Be The Chemist Coordinator, Daniel Brennan, SUNY Broome

2016 Local Section Outreach Volunteer of the Year  Alison Sheridan-Brennan, SUNY Broome

ACS Binghamton Local Section Members Celebrating 50 Years in ACS  Brendan R. Flynn

ACS Binghamton Local Section Members Celebrating 60 Years in ACS  William B. Dixon

ACS Binghamton Local Section Distinguished Teaching Award  Richmond Watson, Main-Endwell High School

ACS Binghamton Local Section Distinguished Service Award  Christof Grewer, BU

ACS Binghamton Local Section Distinguished Research Award, Mark Poliks, BU
A Bird’s eye view of the Binghamton Local Section Awards dinner; 50 year Member, Brendan Flynn; Outreach awardee, Alison Sheridan-Brennan; Distinguished Service awardee, Christof Grewer; Distinguished Research awardee, Mark Poliks. All with Master of Ceremony, Daniel Brennan.
National Chemistry Week

Dr. Sun coordinated the "Solving Mysteries through Chemistry” K-12 Poem Contest. The illustrated poems were displayed at the Science II Hall at BU on October 22\textsuperscript{nd}. More than 65 people came to celebrate the National Chemistry Week with a delicious cake and voted on the best poem for each age group and the 1\textsuperscript{st} place of each category was sent to ACS to compete in the National competition.

Faculty, staff and students voted on the poster contest and enjoyed the NCW cake.
NERM 2016

Our Section hosted NERM for the third time and we could not have been more pleased! We had a record attendance and a very successful event!

The awards dinner was well attended with students and professionals in attendance.

President Elect Dr. Allison Campbell and the NER ACS Board celebrating the 75th anniversary of the Binghamton Local Section at NERM 2016 in Binghamton.
There were four poster sessions and a special program for students’ professional development.

Finally...

*Our final celebration of the Binghamton Local Section 75th Anniversary is December 9, 2016 at Binghamton University.*

*Poster Session at 3 pm in Science Library Lobby*

*Recognition Celebration at 4 pm in SL 212*
Binghamton Local Section members work to provide valuable chemistry and science experiences for our youth and community. We believe that these experiences foster an interest in science and, in some, a career in chemistry or an allied field. We believe that our students, whether in elementary, high school or at college, are one of the region’s greatest resources and investing in them is vital to their futures and to the region. In this special 75th Anniversary Pipet we highlight stories that celebrate this aspect of the Binghamton Local Section’s mission.

Importance of Outreach
Alison Brennan, Secretary, and Daniel Brennan, Immediate Past Chair

The ACS Binghamton Local Section has a longstanding tradition of engaging its members and the Greater Binghamton community in chemistry outreach. Some efforts, like National Chemistry Week (NCW) and the NYS Science Olympiad’s Southern Tier Regional Tournament, have been actively coordinated by the Binghamton Local Section for decades while others, like the CEF’s You Be The Chemist Greater Binghamton Local Challenge, are still in their infancy. Despite such differences, all of these efforts strive to achieve the same goals: engaging young people in the marvels of chemistry and communicating the importance of chemistry to the community.

As active contributors to this variety of outreach endeavors, we are often asked why we volunteer so much of our time for these efforts. For us, it’s a very personal commitment since neither of us knew any chemists or really had a grasp of what chemistry was all about until we attended some local outreach efforts as teenagers. The excitement of turning pennies into “silver” and “gold” or watching the solution in a flask change from colorless to deep blue was magical. It awakened a sense of childlike wonder that had long been dulled by formal education. More importantly, we actually came to realize that we could be chemists too!

Greater Binghamton has countless youngsters with the potential to be outstanding chemists if they would only have that flame ignited by those of us engaged in this noble profession. Even if not a single student that participates in our local outreach efforts goes on to become a professional chemist, having a local community that demonstrates a respect of and appreciation for chemistry in their daily lives is certainly a valuable and worthwhile outcome. One of the major obstacles to achieving this goal is having enough volunteers to continue the efforts we currently offer, let alone to expand into new areas. Maybe you feel uncomfortable interacting with the public or are uneasy about finding ways to communicate in simple terms, without relying on technical jargon. The good news is that you are not alone! Most of us have experienced those same doubts and overcome them by shadowing more experienced volunteers. If you have ever considered volunteering for an outreach activity, our advice is to give it a try. You may just discover the secret that some of us have known for years: No matter how much effort you put into outreach, you always get much more out of the experience!
American Chemical Society in Chenango County  
Gwen Lubey, Member-At-Large

*Science Outreach in Chenango County.* Mentoring and supporting science in our community through outreach and scholarship programs connects people with the science in their everyday life. Effectively communicating science to people, especially children, is important in sparking their curiosity, engaging interest and fostering understanding. That first modest connection to science might launch a hobby, an amateur pursuit, inspire participation in ‘Citizen Science’, or even lead to a career.

*The Norwich Section.* Norwich, along with Chenango County, was originally within the local territory of the Binghamton ACS Section. The Norwich Subsection was formed in 1964 by scientists and technical staff of the Norwich Pharmacal Company. After the business transformed into the Norwich Eaton Pharmaceuticals Company, the subsection also changed. The Norwich Section was chartered in 1970; establishing its territory as Chenango County, NY, and its headquarters at Norwich, NY. Although the title of the group had changed over time, the mission of the science-minded folks of Chenango County stayed the same. Along with creating a strong professional network, they sought to engage and excite people of all backgrounds about the wonder of science; young children, students, any member of the community. This mission continues, even after events brought Norwich back within the Binghamton Section in 2010.

*Science in Everyday Life.* Sponsoring an event is the moment when science meets an audience to tell a story. The topics and content of the Norwich outreach programs have been selected and designed to engage particular audiences: whether young children and their parents; students and teachers; or scientific and technical professionals. We ‘get the science out of the lab’ by holding events at familiar places in the community; at the school auditorium, the library, the civic center or the local theater.

*Science Connects.* As a rural community, Chenango County might be viewed as too small or remote a region for there to be any strong interest in science. However, the network between scientists and community is as important as the network among scientists. By engaging our community to ‘think like a scientist,’ we seek to spark their curiosity, fuel their interest to explore further, and encourage them to participate as citizen scientists. Science becomes the means for insight and inspiration about the physical world.

*Presenting Science!* Since 1967 the Norwich Section has supported and encouraged students interested in science through outreach activities, including: Essay Contests; Science Fairs; Industry tours; Science Demonstrations at events throughout the year supporting science experiences in the Chenango County community. The section also celebrated excellence through Student Awards Banquets and the Drs. Paul Scholarship. Established in 1977 to honor Dr. Mary and Dr. Henry Paul, the scholarships furthered the Drs.’ support of science education. The scholarships are awarded to high school science students pursuing higher education in science or engineering.
Activities as a Chemistry Teacher in the Binghamton Local Section for 20-plus Years Diana Simpson, Member-At-Large

Since my first day teaching Advanced Placement Chemistry at Seton Catholic Central High School, I have always looked for new and innovative ways to increase my exposure to science and to engage my students in questioning. Two of the best ways that I have discovered are Science Olympiad and Chemistry Olympiad competitions which are and have been supported by the Binghamton Local Section for all of these years. Both of these engage my students in hands on activities that make them question, research and solve problems--lifelong learning skills they need to be successful in this day and age. As a Science Olympiad coach, I am allowing my students to challenge themselves in a variety of venues and disciplines, including all of the sciences along with English, Math, Technology and History, as a team. As a teacher I love this aspect because I do understand that not all of my students will become Chemists, but if they can combine something they love along with the science, then that is a positive step forward to having more thought provoking discussions and informed citizens in the world. My team enjoys seeing how the other teams solve the challenges of Science Olympiad and I enjoy conversations with the other coaches about the trials and tribulations of getting our teams together, on task and on time! The competition includes real-life scenarios from Forensics to Bird Watching to Rocks & Minerals to Experimental Design to Write It, Do It, etc.

Chemistry Olympiad takes my top students and challenges them to go further and deeper into a topic they enjoy. They are exposed to a different way of thinking, knowing that there are others out there who are doing the same thing as they are, creating a community of students and a camaraderie, so to speak, that they may not have in a small school setting. I challenge my students with the questions from this Olympiad all the time, so they do not become complacent, “learning to the AP test”--they learn CHEMISTRY! Whenever I meet other Chemistry teachers, I always ask if they know about Chemistry Olympiad and if they do not, I make sure to give them the information needed to start using this as a resource in their classes. I encourage them to try it out and to see how their students respond to the new challenges.

As a teacher of Chemistry I thank the Local Section for all they do for the high schools in our area to encourage, promote and support the teaching of Chemistry, now and hopefully for many years to come!
Undergraduate Research at Hartwick College
John Dudek and Susan Young

At Hartwick College, the chemistry department values undergraduate research almost as much as teaching. In fact, part of Hartwick’s mission statement is to “integrate a liberal arts education with experiential learning.” In chemistry, we provide an experiential learning component by requiring that all students in our program participate in a laboratory-based research project. Our overall goal with research is to provide students with the opportunity to engage in hands-on learning. After some initial guidance on techniques, equipment, and project goals, the project becomes student driven. The students are empowered to try to solve a complex problem. Through this process, students gain self-confidence and experience a form of intellectual independence. As faculty, our role quickly changes from an instructor to a research mentor. The benefit of undergraduate research for our students is that it allows them to explore an aspect of science where the answer is not found in four-hour laboratory time period. In a typical laboratory exercise, a topic is investigated for short period of time and the answers are often predictable. In research, the project takes longer periods of time and the answers are unknown and not always predictable.

Another value we see for undergraduate research is to provide career preparation for our students. Undergraduate research provides an experience that fosters a sense of independence and teaches students to problem-solve and trouble-shoot in the lab. This experience is invaluable to students who want to continue in the field of science. Employers and graduate schools are looking for students who have research experience because they have learned research techniques, instrumentation skills, and how to work independently. During a job or professional school interview, students demonstrate their scientific knowledge by discussing their undergraduate research project.

Lastly, on a more personal note, the faculty have a sense of pride when we see our research students present their work at a research symposium or at a local or national chemistry conference. We are often amazed at the transformation that has occurred in our students as they develop confidence and a deeper knowledge of their field of interest. It is a joy to see them transform into confident students who are knowledgeable about and proud of their research work.
A Conversation with Brian Callahan, Assistant Professor of Chemistry, Binghamton University
Brian Callahan and Rebecca Kissling

What do you look for in a prospective student? First, I look for someone who can clearly articulate specifically why they have an interest in my work and what they hope to gain from an undergraduate research experience. Even if a student can answer the why & what questions, they still have to answer the question of when; when, in their busy schedule, can they come to the lab for focused, scholarly research time.

Once they are in the lab, what makes a good undergraduate researcher? Grit, perseverance, self-confidence, but definitely not arrogance – arrogance is the biggest obstacle to research; it prevents a student from asking questions, setting up proper controls, and critically evaluating experimental data.

What are your expectations of undergraduate students? I define success for undergraduate researchers as authorship on a peer-reviewed scientific article. Putting in the time necessary to make a contribution that warrants authorship is not easy; student have commitments outside the lab to classes, sports, clubs etc. But those barriers to success should only add to the appeal of pursuing this very worthwhile goal and to the feeling of accomplishment when the goal is met.

What would you consider your mentoring style? I follow the medical school model of “see one, do one, teach one”. It captures my desire to accelerate independence in the lab, and it reflects the limited time I have for one-on-one training of undergraduates.

As a scientist who also mentors graduate students, how valuable is work completed by undergraduates? Very

Why do you think it is important to train undergraduates? I see training undergraduates as part of an educational mission. Focused, scholarly time in the lab offers students an opportunity to put their minds to work, of course, but also put their hands to work using instruments and techniques they’ve only encountered in an abstract way through classes. Research connects the hands and the brain in a way that uniquely strengthens and deepens education.

In what ways have your undergraduate researchers surprised you/ impressed you? Many ways. It’s most satisfying to see a student evolve from near total dependence to near total independence. First sponges, with more time the successful students begin reading papers, even trying out new approaches on their own, and by the end they are confident to critique ideas that I bring to the lab – yes! I tell students that there is nothing I love more than when they come into my office and say “I was reading this paper last night, and…” Fine if that paper supports our hypothesis, even better if it doesn’t, but best that the student is becoming an active participant in the research.
2017 Binghamton Local Section

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