SPECIAL EDITION

Lehigh Valley Section of the American Chemical Society
125th Anniversary Celebration
“Building New Partnerships”

This special 125th anniversary edition of the Octagon is devoted to the 125th anniversary celebration and the history of our section. Thank you to all who contributed!

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LVACS 125th Anniversary Celebration
“Building New Partnerships”
March 16, 2019
Iacocca Hall, Lehigh University, Bethlehem PA

PROGRAM

Welcome Remarks ............................................................................................................. Lorena Tribe
125th Organizing Committee Chair’s Remarks ............................................................... Celia Williams
Lehigh Valley ACS Chair’s Remarks .............................................................................. Denise Beaufreault

DINNER

MEMBER RECOGNITION

50 YEAR MEMBERS
John Balas, Augustine Dalton, Michael Ford, John Hofmann, Kamil Klier,
Eugene Rynkowski, James Scheiner, John Snyder, Joseph Warchol

60 YEAR MEMBERS
Charles Breuer, Ronald Carlson, Max Gerlach, Ned Heindel,
Joseph Sherm, Harry Warren, Richard Winings

70 YEAR MEMBER
James Seullin

KEYNOTE ADDRESS
Dr. Teri Quinn Gray, Ph.D., ACS Director, District III
“Building New Partnerships” - Making Education Real & Relevant
AWARDS
LVACS Volunteer of the Year.................................................................Jennifer Mehalshick
Excellence in Small College Teaching ..................................................Julie Ealy
Promoting Partnership ........................................................................Da Vinci Science Center
Advancing Diversity in the Chemical Sciences......................................Celia Williams
Excellence in High School Teaching .....................................................Corinne Long

Closing Remarks ......................................................................................Lorena Tribe

ABOUT OUR SECTION
The Lehigh Valley Section of the American Chemical Society is a volunteer organization that was founded in 1894 and serves the Lehigh Valley Area including regions of Northeast Pennsylvania, Southern New York and Northwest New Jersey. The LVACS is committed to the advancement of chemistry and chemical engineering and encourages interest in the chemical sciences. Activities seek to promote public awareness of chemistry through involvement in the community and various outreach programs. The LVACS works with industry and academia to educate the students, professionals and the general public about the benefits of our profession and science. The LVACS also provides a valuable forum for communication between members and serves as a platform for sharing scientific and educational information.

125TH ORGANIZING COMMITTEE
Celia Williams
Denise Beauteau
John Freeman
Jonathan Fura
Greglynn Gibbs
Seji Inaoaka
Jennifer Mehalshick
George Ruger
Nigel Sanders
Lorena Tribe

SPONSORS
LVACS would like to acknowledge and thank the sponsors of this event:

Nigel and Regina Sanders congratulate the LVACS on 125 years of service to its members and the community
Organizing Committee

CELLA WILLIAMS
DENISE BEAUTREAU
JOHN FREEMAN
JONATHAN FURA
GREGGLYNN GIBBS
SEJI INAOKA
JENNIFER MEHALSHICK
GEORGE RUGER
NIGEL SANDERS
LORENA TRIBE

American Chemical Society
Lehigh Valley Local Section

March 22, 2019

The Lehigh Valley local section of the American Chemical Society (LVACS) held its 125th anniversary reception at Lehigh University, Iacocca Hall in Bethlehem on Saturday March 16, 2019. In attendance were 72 professionals, including LVACS and NJACS members, high school teachers, professors of local universities and colleges, entrepreneurs, retirees and representatives of chemical businesses, industries and non-profit organizations.

The theme of the event was “Building New Partnerships” and highlighted keynote speaker Teri Quinn Gray, Ph.D., ACS Director, District III. Teri gave an excellent and inspiring speech on “Building New Partnerships – Making Education Real and Relevant.”

The evening included a cocktail hour, followed by dinner with a choice of Roasted Salmon, Tuscan Chicken or Caramelized Onion Risotto Cake. The ceremony was emceed by Lorena Tribe with remarks by Cella Williams, Chair of the 125th organizing committee and Denise Beautreau, Chair of the LVACS.

The ceremony featured a member recognition program for 50, 60 and 70 years members of the LVACS and distribution of awards for outstanding partner institution, volunteers and educational professionals. The names of the 50, 60 and 70 years LVACS members and their associated designation follow:

50 year members
Eugene Rynkowski, Kamil Klier, John Thomas Balas, Augustine Ivanhoe Dalton, Michael Edward Ford, John E. Hofmann, John Louis Snyder, James Edward Schelker, Joseph Frederick Warholm

60 year members

70 year member
James Phillip Scullin

The award winners for the year 2018 were:
LVACS Volunteer of the Year – Jennifer Mehalshick
Excellence in Small College Teaching – Julie Ealy
Advancing Diversity in the Chemical Sciences – Cella Williams
Excellence in High School Teaching – Corinne Long
Promoting Partnership – Da Vinci Science Center

A special honor was awarded to Dr. Ned Heindel and a certificate and a gift presented in recognition of his distinguished service and dedication to the vision and goals of the LVACS.

American Chemical Society
Lehigh Valley Local Section | lvacs1b@gmail.com | https://lvacs.sites.acs.org/
Award Winners
Davinci Science Center
Corinne Long
Celia Williams
Julie Ealy
Jennifer Mehalshick

125th Anniversary
Commemorative Stemless Wineglass

Keynote Speaker,
Teri Quinn Gray
with
Celia Williams
and
Denise Beautreau

Displays
And a Good Time was had by All!
The Valley is a Great Place to Learn -
The History of Colleges in the Lehigh Valley Section
(information submitted by each institution)

Albright College, Reading, PA – Department of Chemistry and Biochemistry (ACS certified)

Albright College went through several mergers until it came to the location and current name. The chemistry major commenced in at least 1929, perhaps even earlier. It is possible the chemistry degree started as early as 1902. Albright College was one of the first small liberal arts colleges to offer biochemistry as a major starting in the early 70’s.

Albright College, Department of Chemistry and Biochemistry department currently has eight faculty members and houses chemistry and biochemistry majors. We currently have about 55 majors in chemistry and biochemistry, some of whom are combined with other majors. We offer the following degree options: Biochemistry, chemistry, chemistry education, and environmental chemistry. Students also combine chemistry with other majors including mathematics, physics, and criminology most recently. The department hosts a yearly seminar series with about one speaker per month and one distinguished lecturer per academic year.

The Albright College Science Center underwent an addition and renovation project, which was completed in 2011. The Science Center houses the Departments of Chemistry and Biochemistry, Biology, and Physics.

Notable alumni from Albright College include:

Joseph E. Coleman, graduated with a BS in chemistry in 1944.
https://www.albright.edu/reporter/fall01/afamexp1.html

Dr. Dennis Hess, a professor at Georgia Tech, School of Chemical and Biomolecular Engineering, earned his BS in chemistry from Albright in 1968.
http://hess.chbe.gatech.edu/dennis-hess/

Dr. Anthony Serianni, a professor at Notre Dame, Department of Chemistry and Biochemistry and President and CEO of Omicron Biochemicals, Inc., earned his BS in chemistry from Albright in 1975.
https://chemistry.nd.edu/people/anthony-s-serianni/

Dr. Jacquelyn Fetrow, the current president of Albright College, earned her BS in biochemistry from Albright in 1983. Dr. Fetrow and her mentor Dr. George Rose discovered the “omega loop protein conformation.”

East Stroudsburg University of Pennsylvania, East Stroudsburg, PA - Department of Chemistry and Biochemistry (ACS and ASBMB certified)

In 2017, the East Stroudsburg University Department of Chemistry became the Department of Chemistry and Biochemistry, in fuller recognition of our ASBMB certified biochemistry program. The autonomous department had been formed over three decades earlier. Prior chemistry students were housed in a Department of Natural Sciences.
Currently the department has 6 tenured and 1 tenure-track professors, with hiring for another in progress. Six additional graduate-degreed adjunct instructors, mostly part-time, have served our students this year. A full-time laboratory manager and administrative assistant provide support. About 100 majors are progressing towards degrees. In a typical year, 15 to 25 students graduate with degrees distributed among the B.A. Chemistry, B.S. Chemistry (ACS approved), B.S. Chemistry (secondary education concentration), B.S. Biochemistry (ASBMB certified), and B.S. Chemical Biotechnology (including pre-pharmacy concentration). Pre-pharmacy students may pursue transfer arrangements prior to graduation from ESU. Many current ESU students who have transferred in from regional community colleges are supported by scholarships under the NSF grant-funded ClearPath articulation program spearheaded by Dr. Michelle Jones-Wilson.

Classrooms, labs, and offices are housed in the Hoeffner Science and Technology Center (2008). The main lecture hall in the building was funded through the philanthropy of Dr. Sam Niedbala (B.S. Chemistry '82) an entrepreneurial alumnus whose subsequent Ph.D. from Lehigh University served him as founder and CEO of OraSure Technologies and CryoConcepts LP in the Lehigh Valley.

**Lafayette College, Easton, PA** - Department of Chemistry (ACS Certified)

Lafayette College first chemistry courses appeared in 1832, with a BS Degree in "General Science and Chemistry" starting in 1865. In March 6, 1890 an issue of, The Lafayette (the oldest college newspaper in Pennsylvania) reported “Prof. Hart, the efficient occupant of the chair of Analytical Chemistry of our college is engaged in a work, which if successful, will render Lafayette capable of competing with any college in the country for superiority in chemical instruction.” The work referred to was the construction of chemical laboratories by enlargement of Jenks Hall, built in 1865 as the home of chemistry. Prof. Hart had already raised twelve-thousand of the twenty-thousand required for the building. In 1901 the chemistry and metallurgy departments were housed in Gayley Hall which was torn down in the 1960s. Olin Hall of Science, built in 1957 became the department’s home until the opening of the Hugel Science Center in 2000.

Currently Lafayette College has 10 faculty lines in chemistry. Each summer, a number of majors carry out full-time research in the department, funded by faculty research grants and/or the College EXCEL Scholars program, which provides a salary and free room accommodations. The EXCEL Scholars program also funds paid research opportunities during the academic year and the January interim session. Each faculty member supervises an approximately 600-square-foot research laboratory dedicated to collaborative faculty/student research activities. National and regional presentation and publication with students is common. The class of 2019 includes 14 majors. In addition to the B.S. in Chemistry, the department also offers an A.B. Chemistry, an A.B. Biochemistry, and a B.S. in Biochemistry.
Lehigh University, Bethlehem, PA - Department of Chemistry (ACS Certified)

Lehigh University hired its first chemistry professor, Charles Mayer Wetherill, M.D., Ph.D., in 1865 because the trustees had decided that Chemistry was to be one of the first 5 majors in their newly formed University. Wetherill was an analytical chemist from a wealthy family with major industrial investments which included Saucon Zinc Works in nearby Friedensville. He had been an analytical chemist for the US Government during the Civil War and not surprisingly wrote Lehigh’s first chemistry track purely in his discipline. He called the degree A.C. for Analytical Chemist and it was the only chemistry-centric degree Lehigh granted till 1905 when it switched to a B.S. One of America’s first journals, The American Chemist (1871-1877) was co-founded by Lehigh’s second chair (William H. Chandler) and his brother, Charles Chandler, Chair at Columbia University. The two Chandlers were among a small group of founders of the national ACS and each individually founded the local sections in their respective cities (Bethlehem and New York).

The option of granting graduate degrees was clearly anticipated by Lehigh from its formal opening in 1866 but the first M.S. in chemistry wasn’t granted till 1891 with a Ph.D. to the same individual (Joseph Richards) in 1894. The doctoral program was discontinued in that year and was resurrected in 1937. Lehigh created an industrial chemistry B.S. major in 1895 (which was changed to a Chemical Engineering B.S. in 1907 and transferred to an independent department in 1952), admitted women graduate students in 1941, and went fully co-educational at the undergraduate level in 1972. Over the years it experimented with a variety of degree programs including the A.C., B.S. in industrial chemistry, M.S. in biotechnology, M.S. solid state, M.S. in clinical chemistry, a Doctor of Arts (DA) in chemical education, and an M.S. and Ph.D. in pharmaceutical chemistry (which was also offered online in a unique distance education program which Lehigh operated from 1991 to 2018).

Today the department has 17 faculty with two new hires expected next Fall and two laboratory managers covering all the major areas of Chemistry. It graduates annually 12 - 20 chemistry B.S./B.A. grads who, because of Lehigh’s ChemFlex curriculum can concentrate on the ACS-approved program, analytical-physical chemistry, polymers, materials, chemistry business, health professions, pharmaceutical chemistry, and biochemistry. The department currently offers no specialized M.S. degrees with unique titles although students can assemble by course work choices a customized competency in eight to ten subject domains under the M.S.-chemistry title. Approximately 5-10 M.S. students and 2 – 5 doctoral graduates annually complete their studies at Lehigh.

Muhlenberg College, Allentown, PA - Department of Chemistry (ACS Certified)

Muhlenberg College in Allentown, PA, Chemistry was first listed as a department in the 1920/1921 course catalog, although the first Chemistry course was listed as early as the 1881/1882 catalog. Muhlenberg’s Chemistry Department has 9 Chemistry and Biochemistry Faculty, 16 Chemistry majors, and 29 Biochemistry majors total. We also have 10 Chemistry minors and 22 Environmental Science majors total. We offer a non-ACS-certified and an ACS-certified B.S. in Chemistry.

Charles E. Mortimer, Class of ’42, was a Professor of Chemistry at Muhlenberg who published the book “Chemistry: A Conceptual Approach”, a popular General Chemistry textbook, in 1967. The College was also an early and active proponent of undergraduate research, and we continue to have an active undergraduate research program. Some
other tidbits include: our existing Tuition Exchange Program was initially run by the Chemistry Department in its early years and, although we are a primarily undergraduate institution, there are rumors that we graduated one chemistry Ph.D. years ago.

**Penn State Berks, Reading, PA** - Division of Science (ACS Certified)

Penn State Berks began as a campus 60 years ago. In 1998 a reorganization of Penn State allowed campuses to begin offering Bachelor’s Degrees. One of the first degrees offered was a BS in Science with a Life Science and General Science option. While chemistry was not a significant part of the curriculum students could take upper-level chemistry electives. Most of the students were focused on Life Science and so most electives related to chemistry were in the biochemical arena. Ten years later a Biology degree was approved with two options: General Biology and Genetics & Cellular Biology. Based on the success of the first two degrees the Eberly College of Science approved Berks to be the first campus outside University Park to offer the Biochemistry and Molecular Biology degree. Two options are available for the BS in BMB: Molecular Biology or Biochemistry. The Biochemistry option has the most chemistry with a course in Analytical Biochemistry and both Physical Chemistry I and II.

Approximately 15 students graduate in each of the three degrees each year. Several graduates have moved on to graduate programs in chemistry. Two of our alum have recently accepted tenure-track positions after earning a PhD in chemistry: one from Cornell and one from University of Virginia.

**Other Colleges/Universities in the Section include:**

- **Cedar Crest College**, Allentown, PA
- **DeSales University**, Center Valley, PA
- **Kutztown University of Pennsylvania**, Kutztown, PA
- **Lehigh Carbon Community College**, Schnecksville, PA
- **Moravian College**, Bethlehem, PA
- **Northampton Community College**, Bethlehem, PA
"Then and Now and In-Between: Industrial Chemistry in the Lehigh Valley ACS"

Submitted by Ned D. Heindel, Ph.D.

The fifteen chemists who showed up on 15 February 1894 for the organizational meeting of the Lehigh Valley ACS local section were a typical mix of chemists of that day -- some academic, some industrial, and some with feet in both camps. (Please see the minutes of the first meeting and the names of the attendees as mentioned elsewhere in this Octagon.) Of that group, only Edward Hart and William Schober could be called organic chemists (both recent Johns Hopkins PhDs). Schober's field was new dyestuff synthesis. All the rest of the attendees were inorganic/analytical types. Albert H. Welles was a coal chemist, who taught part time at Lafayette, as was the Bethlehem Iron chemist Albert Ladd Colby, who taught part time at Lehigh. Porter W. Shimer worked for Thomas Iron and later as a consulting chemist to Bethlehem Iron. Trail Green, chemist-physician from Lafayette, was a consultant and practitioner in materia medica. Joseph Richards had recently worked for the copper refining industry and was now teaching metallurgical chemistry at Lehigh. Earl A. Brinker and William H. Chandler, although academic chemists, ran commercial analytical labs on the side for extra income. Edward Hart, a Lafayette professor, and his former student, J. T. Baker, were equity holders in Baker & Adamson Chemical Company and later in the J. T. Baker Chemical Company.

It wasn’t surprising that with all the flourishing cement, coal, zinc, lead, iron, and limestone businesses of the Lehigh Valley the local section’s first members – both the academics and the full-time industrial chemists – were connected to those companies. An MS-holding graduate of Ohio State with considerable industrial experience, Frederick William Spanutius was hired by Lehigh University to create a course in Industrial Chemistry. Spanutius was also one of the charter members of the Lehigh Valley Section.

But industrial chemistry in the decade of our section’s founding meant a series of small-scale laboratories, not the giant corporate R&D centers which would evolve later in the post-World War 1 era. Each of nearly 20 cement manufacturers, e.g., Nazareth, Whitaker, Coplay, Atlas, and others, employed one or two chemists in quality control. Bethlehem Iron and its successor firm, Bethlehem Steel, employed a half-dozen chemist-analysts. Although the Lehigh Valley Railroad needed chemistry, it found it in the 1890s outside of their facilities from academics such as Chandler and Schober who analyzed their boiler water for dissolved solids and their coal for percent ash on a job-by-job contract basis. Baker and Adamson Chemical Co. of Easton was perhaps the largest Lehigh Valley employer of chemists, but most of these were employed in manufacturing.

By the section’s 25th anniversary (1919) the nature of industrial employment of chemists was beginning to change. Aided by America’s growing mining interests and the munition needs of World War I, the Lehigh Valley had sprouted explosive manufacturers who soon became significant employers of chemists. Potts Powder and its successor, Atlas Powder in Tamaqua, and Trojan Powder of Allentown each had more than a dozen chemists at work in research and production. In 1914 a deadly explosion at Trojan killed three chemical production workers and seriously damaged the company’s public image. But the successful commercialization of nitro-starch (used in WWI in mortar shells and grenades) by corporate research chemists saved the company’s fortunes and its image.

In 1912, New Jersey Zinc came to the greater Lehigh Valley when it built a zinc smelter and laboratory in Palmerton. More than a score of chemists researched zinc compounds as anti-fungals, as dermatopharmaceutics (high purity zinc oxide was an early treatment for diaper rash), and as coatings for steel. Many other chemists worked in the smelter. Major improvements in hot zinc galvanizing of
steel for rust inhibition were achieved by Lehigh Valley chemists. Lehigh Paper, Riegel Paper, and several other pulp-to-paper plants (each employing four to six chemists) came into existence along the rivers of the Lehigh Valley. Metal pigment companies (Allentown Paint, C. K. Williams, R. G. Semple, Binney and Smith/Crayola) serving the paint and marker industry began employing modest numbers of chemists in new product development as well as in the more traditional work of QC/QA. Just before WWI, in the Reading area, Althouse Chemical Co., American Color and Chemical, and later Glidden Co. were launched to synthesize organic colorants for fabric dyes and paints. Reading soon became a center for organic chemical research, and a regional organic chemists club was formed.

The Lehigh Valley section’s vehicle for communicating local chemistry, *The Octagon*, was launched in 1917 when the section was 23-years old. In addition to news from all corners of the section, *The Octagon* also ran ads for the colleges and for the companies of our region. When in the 1920s the wax bottle to ship hydrofluoric acid – invented by J. T. Baker and Professor Edward Hart of Lafayette -- went into full scale production by the Sterling Products Company of Easton, *The Octagon* ran an ad to promote it. It did the same when Lehigh Professors James Long and Harvey Neville invented a paint brush using synthetic polymeric fiber for its bristles; the so-called “Deraytex” brush was promoted (1944). During the Great Depression *The Octagon* ran occasional articles on which specific members had been “laid-off” and which ones had recently found employment. *The Octagon* also ran special issues with colored covers to celebrate the Section’s 25th year anniversaries: 25th 1919 (black), 50th 1944 (gold), 75th 1969 (green), and 100th 1994 (ivory).
By 1919 a new model for the industrial chemist was emerging in the Lehigh Valley Section, and that model continued to grow in importance through the section’s 50th anniversary in 1944 and beyond into the 1970s. The industrial chemist was more likely to work for a large company than for a small sole proprietorship. World War II saw major expansions in research at Bethlehem Steel in armaments and munitions and at the newly relocated former I. G. Farben (now renamed General Aniline and Film) plant and labs in Easton. GAF’s chemists worked on dyes, drugs, polymers, and synthetic fibers. In 1944, 85 professional chemists, 4 chemical engineers, 15 research technicians, and 170 chemical plant operators made up the GAF work force.

Not only was chemical employment changing, but so was the Lehigh Valley Section. There were numerous company leaders who became available to staff the section’s officer ranks. The monthly section meetings began to move far and wide. Besides the more traditional collegiate hosts – Lehigh, Lafayette, Albright – LV ACS found itself meeting in company cafeterias in Tamaqua (Atlas Powder), Palmerton (N J Zinc), Reading (Althouse), Easton (GAF), and later in Trexlertown (Air Products and Chemicals). Local restaurants and country clubs in the Tamaqua and Palmerton areas were also used for section meetings. The Blue Ridge Country Club and the Mahoning Valley Country Club were popular meeting places with a late afternoon round of golf, a well-stocked bar, and beautiful views adding to the benefits of the chemistry programming. From time-to-time a particular meeting (often at the Hotel Easton) was designated as a “Smoker Night” with boxes of high quality cigars available for purchase if the chemist had left his at home.

The usual model for the corporate-hosted dinners was a laboratory-and-plant tour before the dinner followed by a non-proprietary presentation by a senior scientist of the company’s main chemical interests. The academic chemists became closer than ever to their industrial counterparts, and numerous joint research projects were undertaken with students supported by company funds. By the mid-1940s GAF’s labs had the Valley’s first infrared spectrophotometer which they graciously allowed the section’s college faculty to use in evening hours.

Growth in industrial chemical employment by large companies began to slow and then decline sharply in the late 1970s and the trend continued into the 21st century. Locally, Bethlehem Steel closed its labs and plants in the mid-1980s. New Jersey Zinc closed its research lab and smelter and, after a number of management changes, re-emerged as a much smaller zinc recycling business. After a
series of accidents with explosives, Trojan Powder closed its labs and plant forever. Atlas Powder was sold to ICI, and after several other restructurings its research labs and explosives plant were closed. In 1997 the firm became Copperhead Chemical. It now manufactures nitroglycerine for pharmaceutical use. Althouse Chemical underwent a series of ownership changes (one being Crompton and Knowles) with the eventual closure of the Reading and Gibraltar research labs and plant. GAF began shutting down operations in Easton in the 1970s, refocusing its chemistry into polymers for roofing, flooring, and construction. The company moved its much down-sized program initially to Wayne and then to Parsippany, NJ. Bell Labs (Allentown) – long known for a commitment to basic research – refocused on things practical, sold off technologies and components, and closed the Union Boulevard facility. De facto Air Products and Chemicals (APCI) became just Air Products when the amines business and the electronic chemical business were spun off. A few chemists did move into those new business units. Air Products – once a major employer of LV chemists -- has returned to its original focus as an industrial gas company, and very few chemists remain in its work force.

For the Lehigh Valley ACS Section at its 125th anniversary, what is old has become new again. The small entrepreneur, the energetic start-up, and the contract research organization are back and are successfully creating new homes for chemists. In 1983 in facilities on South Mountain which were formerly a part of Bethlehem Steel’s Homer Research Laboratories, the State of Pennsylvania planted one of several state-wide Ben Franklin Partnership incubators. Governor Richard Thornburgh saw state aid to existing and new companies – especially in high tech areas – as a way to begin replacing the lost jobs in steel, electronic components, pharmaceuticals, polymers, and related areas. Other
low cost lab and office space has become available in Reading, at the Jump Start Incubator run by the Berks Community Foundation, and in East Stroudsburg at the University Business Accelerator.

Today the Bethlehem node called Ben Franklin TechVentures is a 129,000 sq ft laboratory/office complex which has incubated or assisted more than 80 companies whose mission could be defined as chemical. Just a few of the many chem-pharma related “alumni” companies who have left the incubator and taken their own space in the Lehigh Valley include Orasure Diagnostics, Digestive Care, ABEC Pharmaceutical Equipment, and Bio Med Sciences. In 2019, forty-two companies employing 170 scientists and engineers presently call the TechVentures Building their home and many of these have a chemistry-health science-materials focus including Azevan Pharmaceutical, Ophidion, VaxForm, 4G Environmental, Hager Biosciences, Saladax Biomedical, Ideal Semiconductor, and Levolta Pharmaceutical.

In addition to the start-ups, contract research organizations (CROs) which employ an increasing number of chemists, now fill in the niche for testing and new product driven development which had formerly been an important component of the large integrated companies. U.S. Specialty Formulation, Particle Sciences (a Lubrizol Company), Absorption Systems, and Puritan Products are just a few of the more recent CROs employing chemists in our region.

From our 15 founding members in 1894, to 181 in 1944 on the occasion of the Lehigh Valley Section’s 50th anniversary, to our 770 members today, our section has grown in membership and also in the breadth of industrial employment. Industrial chemists in 2019 do far more than analyze raw materials and certify the composition of products. Founders Hart and Baker, who nurtured three start-ups in their day, as well as Shimer and Brinker who operated testing laboratories, would fit right in and understand the corporate climate of the 21st century, although they would certainly be curious about interpenetrating polymer networks, electronic components, and bio-produced pharmaceuticals.

"This article is not intended to be a comprehensive coverage of all companies -- large and small -- who have employed Lehigh Valley chemists in the last 125-years. Space requirements necessitated that several significant companies were not able to be included."

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<thead>
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<th>LVACS Chairs - 1994-2018</th>
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<tr>
<td>1999 Roger A. Egolf 2008 Julie B. Ealy 2017 Celia Williams</td>
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<td>2000 Paul S. Bouis 2009 Chester A. Crane 2018 John C. Freeman</td>
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<td>2001 Paul S. Bouis 2010 William H. Miles</td>
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<td>2002 Joseph A. Sherma 2011 Nigel Sanders</td>
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Women Chemists in the Valley - Then and Now
Submitted by Ned Heindel, Ph.D.

Looking back from our social mores of the 21st century it is easy to tag the Lehigh Valley ACS section, at least for its first 45 years, as being less than welcoming to women. The early Octagons frequently ran a quotation from President Theodore Roosevelt, “A man should always support his professional society.” The smoker nights, the open bars, and the late afternoon golf outings at country clubs along the Blue Ridge were not exactly the preferred fare of women of that time and, in truth, there were actually very few women chemists abroad in the land. Wives of section chairmen were expected to host and feed the Executive Committee planning sessions in their homes and to receive their scant reward from a free ticket to the annual so-called “Ladies Night” -- usually the last section meeting in the Spring. In the 1930s one sees a few women on the section’s membership list almost invariably from Cedar Crest in Allentown or Centenary College in Hackettstown with one or two science-educated wives of chemists. The rosters for 1940s show Esther A. Engle (Cedar Crest), Miss M. D. Newman (Centenary), and Mrs. Walter O. Snelling (Allentown) as members and, in fact, Professor Engle was elected for 1940-1941 the section’s first female chairman. When three years later she left Allentown for Indiana The Octagon’s editor – probably unknowingly – inserted a condescending remark. In 1949 Lehigh’s chemistry department graduated its first woman PhD, Mary Perry, later to become chair at Cedar Crest. Dr. Perry always remembered how the men of the department were so disappointed that she was in St. Luke’s delivering her first child on commencement day. As she phrased it, “They so much wanted me to march in the procession.” Times have changed and if Esther and Mary were to look at the section’s roster and its leadership today, it would be interesting to speculate on what they’d say.

The Lehigh Valley Section’s first woman chair was Dr. Esther A. Engle, PhD (Columbia University) who was Professor of Chemistry at Cedar Crest College.

Mary H. Perry, Lehigh University’s first woman chemistry PhD, 1949, analytical chemist and later to become chair at Cedar Crest.

In a rather odd condescending comment The Octagon’s editor in a brief 1944 bio of Dr. Engle as she was leaving Cedar Crest for a research position at Commercial Solvents in Terre Haute, Indiana, noted: “The Section is proud of its former lady chairman who modestly calls herself ‘just a corn belt farmer.’ “ Editors Note: The current editor would say no such thing!

Although Lehigh was an all-male institution until 1971, times were different during World War II and the decision was made to admit a small number of women for graduate studies. Perry, who had received her B.S. degree from Russell Sage College, was awarded her M.S. from Lehigh in 1946. Perry petitioned the university to continue on for the doctorate, which was awarded in 1949.
Back to the Beginning - Minutes of the first three meetings of the LVACS - 1984

Minutes of the First Three Meetings
Lehigh Valley Section

February 15, 1884

A meeting to organize a local section of the American Chemical Society was held on this date, in a recitation room of the Chemical Laboratory of Lehigh University, South Bethlehem, Pa., at 7:30 o'clock, p.m.

Temporary organization was effected by the election of Prof. Edward Hart as Chairman and Albert H. Welles as Secretary. The Chairman was, on motion, made one of a nominating committee, together with Prof. Wm. H. Chandler and the Secretary pro tem. It was decided that there should be four officers, viz., a President, a Secretary, and a Treasurer, and a fourth, who with the other three should constitute the Executive Committee.

The nominating committee reported the following nominees: President, Wm. H. Chandler; Secretary, A. H. Welles; Treasurer, Albert L. Collby; member of the Executive Committee, Clemens Jones. On motion, these persons were elected to their respective offices by acclamation. Dr. Chandler took the chair. Prof. Hart moved that the section meet monthly with Prof. Richards supplementing this motion by an amendment that the meetings be held alternately in Bethlehem and Easton. Carried.

A committee of three was appointed by the President to prepare a program for the next meeting. The Secretary, Dr. Sheber, and Prof. Hart being named. It was decided that the date of the second meeting should be April 5th.

The Executive Committee was empowered to draw up a Constitution and By-Laws and submit them to the section at the next meeting. The following persons were present: Messrs. Chandler, Richards, Schun, Spanuhts, Sheber, Collby, Buck, Bink, Humlick, Green, Shimer, Hart, Baker, Fuehs, and Welles, fifteen in all.

On motion, the meeting adjourned.

Albert H. Welles, Secretary
April 5, 1884

The second meeting of the Lehigh Valley Section was held on this date in the laboratory of Lafayette College. There were 26 present, including visitors.

The minutes of the previous meeting were read and approved.

The report of the Committee on Constitution for the Society was then made, and some amendments were made thereto which were then embodied in their report. The report of the special program committee was adopted and it was moved that the order of business prepared by them for this meeting be put in the By-Laws as the regular order for each meeting.

Prof. Hart took the chair and the following papers were read:

"The Demand for the Technical Chemists,"
Wm. H. Chandler.
"Phospho hydrocyanic Acid; Wm. B. Sheber,"
Dr. Chandler then resumed the chair and Prof. Hart exhibited and explained a "Resistance Board for Electrolytic Work;"
The Constitution was then taken up for adoption and with the preamble as drawn up by Prof. Hart was adopted as appears on the record.

The following were present: Messrs. Chandler, McNutt, Lee, Bennett, Wirth, Bloomer, Drew, Spanuhts, Sheber, Schun, Maharg, Shimer, Bigelow, Jr., Bigelow, J., Jones, Landau, Chos, Humlick, Kieler, Hand, Fuehs, Carnell, Lovell, Hart, and Welles.
On motion, the meeting adjourned.

Albert H. Welles, Secretary
May 3, 1884

The third meeting of the section was held at Bethlehem, fifteen present, including visitors. President Chandler called the meeting to order in the lecture room of the Chemical Laboratory, at 8 P.M.

The minutes of the April meeting were read and approved. The Constitution was read by the Secretary to verify the corrected copy and was accepted.

Mr. Spanuhts and the Secretary were appointed to a committee by the chair to name the fifth member of the Executive Committee.

Prof. J. W. Richards then read a paper on "The Commercial Valuation of Lead, Tin, and Lead-Alloy Alloys" and showed apparatus for determination.

George Scholl followed with one on "The Testing of Portland Cement."
Mr. Thos. D. Whitaker, of the Whitaker Cement Co., who was present, on invitation of the President, made some interesting remarks on Portland cement from a manufacturer's standpoint. A recess of ten minutes was then taken and the members enjoyed looking through some old folios on alchemy and chemistry from the University Library which Dr. Chandler exhibited.

P. W. Shimer read "A Note on the Determination of Silica in Blast Furnace Slags Containing Sinter."

Mr. Spanuhts' paper on "The Dissociation of Chemical Compounds by Heat" was postponed after partly read till the next meeting as the meeting was obliged to adjourn to allow the Easton members to reach their train. Mr. Scholl was elected as the fifth member of the Executive Committee. Present: Messrs. Chandler, Spanuhts, Sheber, Schun, Richards, Shimer, Hall, Buck, Brink, Hahner, Scholl, Whitaker, King, Zemekli, and Welles.

Albert H. Welles, Secretary
Chemistry in the Valley - 1920’s and 1930’s - Lehigh University

Lehigh’s Chandler Laboratory Building in which the LV ACS was founded in 1894. (Picture 1922)

An open house event held for other students, local citizens, and parents. (1934)
Once a year the chemical companies who provided scholarships or research grants were allowed to display their products in the chem building. Sponsors included J.T.Baker, Bethlehem Steel, Hershey’s Chocolate, National Lead Corporation, and Raybestos-Manhattan Co. (1935)

The recitation room in Chandler Lab where the Lehigh Valley Local Section held its organizational meeting 15 February 1894. Here set up for a general chemistry lecture on atomic structure. (1934).
The Centennial Celebration

Centennial Lectures

Saturday, March 26, 1994
Neville Hall
Lehigh University
Bethlehem, Pennsylvania

Dr. Ned D. Heindel, ACS President, 1994
Dr. Brian Rushton, ACS President-Elect, 1994
Not that long ago...
A few pages from the 100th anniversary edition of the Octagon

Editors Note: Take note of the staples on the side! I remember the days of fold and staple and snail mail - and no color!
Congratulations
Lehigh Valley Section
1894 100th Anniversary 1994

American Chemical Society
In recognition of
a century of contributions in:
Discovery and dissemination
of chemical knowledge
Research and development
and growth of Lehigh Valley industries
Chemical education
Ecological conservancy
Health and welfare of mankind
Safety and control of hazardous materials

The Octagon Vol. 77, 1994

LV - ACS Leaders

The Lehigh Valley Section, as it enters its second century, proudly acclaims two of its members who have been elected by the ranks to lead the American Chemical Society as National President in 1994 and 1995.

Dr. Ned D. Heindel
ACS President, 1994

Dr. Brian M. Rushton
ACS President-Elect, 1994

Ned D. Heindel -
H.S. Burr Chair Professor of Chemistry, Lehigh University, is also Visiting Professor of Therapeutic Radiology, Heinzmann University, Philadelphia. He has served three consecutive three-year terms as Region III director on the ACS Board, a post he has held since 1985. He is also a member of the board's Executive Committee and has served on the Committee on Grants and Awards, the Society Committee on Chemical Abstracts Services and as chairman of the Society Committee on Publications and of the C&EN Publishing Board. He has served on several other governance committees in recent years. Member ACS since 1960.

Brian M. Rushton -
Joined Air Products and Chemicals in 1981; senior vice president R & D 1992 - 1993. Before 1981, he held a number of other industrial positions, including vice president of technology and president of Colaneer Research Co., part of the former Celanese Corp. He was also vice president of R & D for the former Hooker Chemical Corp. Member ACS since 1976; contributing author, ACS Symposium Series, 1980; Canvassing Committee, Earl Barnes Award for Leadership in Chemical Research Management, 1992-95.
LEHIGH VALLEY SECTION
AMERICAN CHEMICAL SOCIETY
1894 CENTENNIAL CELEBRATION 1994
March 26, 1994

PROGRAM OF EVENTS

10:30 AM  CHANDLER LABORATORY
           DEDICATION -
           LEHIGH UNIVERSITY
- Ceremony designating the William
  H. Chandler Laboratory, which
  served as the first meeting place of
  the LV-ACS Section, as a National
  Historic Chemical Landmark under
  the auspices of the American
  Chemical Society Historic
  Landmarks Program.

2:00 PM  LV-ACS CENTENNIAL LECTURES
           Neville Hall - Lehigh University
           East Packer Avenue
           Recognition of contributions by
           Lehigh Valley Section members to
           the development of chemical spec-
           troscopy over the last 25 years.
           Infrared Spectroscopy -
           Past and Present
           Dr. Roland W. Lovejoy -
           Professor Emeritus
           Department of Chemistry,
           Lehigh University
           Photoelectron Spectroscopy via
           SCIENTA ESCA
           Dr. Kamil Klier -
           Professor, Chairman
           Department of Chemistry,
           Lehigh University
           View exhibits of Lehigh Valley firms
           allied with the chemical industry.

5:30 PM  CENTENNIAL GALA DINNER-
           DANCE
           Hotel Bethlehem
           Reception (Cash Bar)
           Mezzanine
6:30 PM  Dinner
           Ball Room
           Welcome
           Toast to the next 100 years
           Dr. Andrew G. Gilichinski
           Chairman LVACS, 1994
           Invocation
           Rev. Francis R. Osterstock

CENTENNIAL MEETING

Introduction of Head Table
Dr. G. N. Russell Smart
           Toastmaster

Remarks
Dr. John K. Crum
           Executive Director
           American Chemical Society

Remarks
Dr. Paul H. L. Walter
           Chairman, Board of Directors
           American Chemical Society

Introduction of National Chemical Historic
Landmark Committee
Dr. Roger Egolf
           Chairman
           Chemical Historic Landmark Project
           Lehigh Valley Section ACS

Presentation of LVACS Distinguished
Service Award
Dr. Andrew G. Gilichinski
           Chairman
           Lehigh Valley Section ACS

Introduction of 50 Year Members — 1994
Dr. Charles E. Russell
           Chairman-Elect
           Lehigh Valley Section ACS

Recognition of Past Chairmen
Dr. Attila Pavlish
           Director at Large
           American Chemical Society

Introduction of Lehigh Valley Section
ACS Officers

Recognition of Centennial
Celebration Committee

Centennial Address
Dr. Ned D. Heindel, President ACS, 1994

Concluding Remarks
Dr. G.N. Russell Smart

9:00 PM  Dancing to the music of
           Dick Henny's Band of Gold
established manufacturers to develop and improve both products and manufacturing processes. Through optimization of process manufacturing, companies can save great sums of money, ranging into the millions of dollars; e.g., through the EQUIP program of the Ben Franklin Center Crompton & Knowles has implemented process changes which have resulted in savings in the millions of dollars with the same quality product.

To inquire further about programs, proposals or any aspect of the NET Ben Franklin Technology Center write to Dr. Mark Lang, Executive Director / 125 Goodman Drive / Bethlehem, PA 18015-3715 or phone the Center at (610)758-5200. The author gratefully acknowledges discussions with, comments by and information provided by Mark Lang, Joe Lane and Bob Thomson of the NET Ben Franklin Center and Mike Gausling of STC.

PROFILE OF MEMBERSHIP - 1994 LEHIGH VALLEY SECTION AMERICAN CHEMICAL SOCIETY

Malcolm L. White
January 1994

In preparation for the Section's Centennial Celebration a mail survey of the members was authorized to alert the membership of this coming event, and to learn of their interest in participating in the affair.

The survey questions were also designed to provide information about employment status, areas of responsibility, discipline of training and professional affiliation.

Answers to the questions were tabulated by Malcolm L. White, whose findings form the basis for this profile. A total of 5,034 double fold post cards were mailed in August of last year, using the current OCTAGON mailing list. 375 cards were returned, which is 76.6% of the section membership, which is not a bad response for a survey of this sort. With regard to employment status, the results are as follows. The percentages are based on total return (375). The first column shows the values for the Lehigh Valley Section and the second column for the national membership (149,261) as taken from the most recent annual report:

<table>
<thead>
<tr>
<th>LV</th>
<th>Nat.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actively Employed</td>
<td>74.1%</td>
</tr>
<tr>
<td>Retired</td>
<td>18.1</td>
</tr>
<tr>
<td>Unemployed/Student</td>
<td>1.1</td>
</tr>
<tr>
<td>Not Specified</td>
<td>8.7</td>
</tr>
</tbody>
</table>

It is interesting that we have a lower employment and a higher retired figure than that for the national, which suggests that the economy here is not as good for our working ACS members as it is nationwide, but this is a better area for retirement.

With regard to Position Held, these were the results:

<table>
<thead>
<tr>
<th>Field</th>
<th>LV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administration</td>
<td>10.7%</td>
</tr>
<tr>
<td>Research</td>
<td>41.1</td>
</tr>
<tr>
<td>Teaching</td>
<td>16.0</td>
</tr>
<tr>
<td>Marketing</td>
<td>5.1</td>
</tr>
<tr>
<td>Other</td>
<td>8.5</td>
</tr>
<tr>
<td>Not Specified</td>
<td>16.8</td>
</tr>
</tbody>
</table>

Another question was Discipline of training. These figures are the number of people:

<table>
<thead>
<tr>
<th>Field</th>
<th>LV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analytical</td>
<td>30</td>
</tr>
<tr>
<td>Biochemical</td>
<td>15</td>
</tr>
<tr>
<td>Biology</td>
<td>3</td>
</tr>
<tr>
<td>Biophysics</td>
<td>1</td>
</tr>
<tr>
<td>Ceramic Engineer</td>
<td>1</td>
</tr>
<tr>
<td>Chemical Engineering</td>
<td>31</td>
</tr>
<tr>
<td>Chemical Physics</td>
<td>2</td>
</tr>
<tr>
<td>Chemistry</td>
<td>91</td>
</tr>
<tr>
<td>Coatings &amp; Ink</td>
<td>1</td>
</tr>
<tr>
<td>Education</td>
<td>1</td>
</tr>
<tr>
<td>Electrochemistry</td>
<td>1</td>
</tr>
<tr>
<td>Environ. Health &amp; Safety</td>
<td>2</td>
</tr>
<tr>
<td>Inorganic</td>
<td>22</td>
</tr>
<tr>
<td>Material Science</td>
<td>2</td>
</tr>
<tr>
<td>Medicine</td>
<td>1</td>
</tr>
<tr>
<td>Molecular Biology</td>
<td>1</td>
</tr>
<tr>
<td>Nuclear Physics</td>
<td>1</td>
</tr>
<tr>
<td>Organic</td>
<td>46</td>
</tr>
<tr>
<td>Organometallic</td>
<td>1</td>
</tr>
<tr>
<td>Paper Science</td>
<td>1</td>
</tr>
<tr>
<td>Pharmaceutical</td>
<td>2</td>
</tr>
<tr>
<td>Physical</td>
<td>24</td>
</tr>
<tr>
<td>Physics</td>
<td>2</td>
</tr>
<tr>
<td>Physiological</td>
<td>1</td>
</tr>
<tr>
<td>Plant Management</td>
<td>1</td>
</tr>
<tr>
<td>Polymer</td>
<td>8</td>
</tr>
<tr>
<td>Product Management</td>
<td>1</td>
</tr>
<tr>
<td>Quality Assurance</td>
<td>1</td>
</tr>
<tr>
<td>Radiochemistry</td>
<td>1</td>
</tr>
<tr>
<td>Solid State</td>
<td>2</td>
</tr>
<tr>
<td>Surface</td>
<td>1</td>
</tr>
<tr>
<td>Textile</td>
<td>1</td>
</tr>
<tr>
<td>Waste Water</td>
<td>1</td>
</tr>
</tbody>
</table>

The final question on the survey was to list a professional affiliation. There were 57 companies (which included consultants), 11 colleges and 7 high schools cited. Here is the listing with the number of local section members in the organization. No number means there is only a single person.

<table>
<thead>
<tr>
<th>Companies</th>
<th>LV</th>
</tr>
</thead>
<tbody>
<tr>
<td>AERC</td>
<td></td>
</tr>
<tr>
<td>Agrashell</td>
<td></td>
</tr>
<tr>
<td>Air Products (58)</td>
<td></td>
</tr>
<tr>
<td>Allentown Cement</td>
<td></td>
</tr>
<tr>
<td>Allied Signal</td>
<td></td>
</tr>
<tr>
<td>Alpo Pet Foods</td>
<td></td>
</tr>
<tr>
<td>American Cyanamid</td>
<td></td>
</tr>
<tr>
<td>American Maize</td>
<td></td>
</tr>
</tbody>
</table>
This seems like a large number of companies for this area, but in looking at a 1961 membership survey in the Octagon there were 90 companies listed at that time. Unfortunately, it isn’t possible to compare that number with the current one, for the 1961 listing was for all the members, whereas the current one is only a one-third sampling of the membership.

Presumably a complete roster would significantly increase the number of companies.
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Congratulations  
125 Years