The SAS Spectrum

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The Newsletter of the Society for Applied Spectroscopy, a supplement to ***Applied Spectroscopy, Vol 50, No 9***

From the President

It's hard to believe that we're more than half way through 1996! It has been a very busy year for SAS and we have seen a lot of changes. I'd like to take this opportunity to give you an update and to share some insights.

In January, the SAS Executive Committee (EC) met near BWI airport to do strategic planning and critically evaluate the health of the organization. This resulted in several special initiatives. Through discussions between EC members, staff, and our facilitator, several things became clear. We realized it is important to offer significant member benefits and to work on member retention. We also learned that gimmicks don't typically attract scientists and that what SAS has to focus on is the fact that we can offer membership in a premier spectroscopic society, with many very talented members in academia, government, and industry. We committed to the publication of a membership directory which all members should have in hand now, since it was shipped with the July issue of Applied Spectroscopy. We hope this will prove to be a valuable resource to our members and an effective tool to facilitate networking. During our retreat we looked at feedback relative to Applied Spectroscopy and were pleased to see that the Focus articles are receiving widespread recognition and that the journal remains one of the best values in the industry. We tasked the Publications Committee to evaluate the suitability of having an applications newsletter and talked about using the World Wide Web as the media. We committed to establishing some mini-courses to offer in addition to the SAS short courses and we evaluated the benefit of increasing our international membership. We took a hard look at the local sections that are inactive or only minimally active, and talked about strategies for increasing involvement. In a climate of "downsizing" and "corporate cutbacks" we're concerned about retaining members and meeting their needs. We have to ask ourselves if a monthly dinner meeting remains the most appropriate venue for involvement at the local section level. Should local sections be considering half day workshops or 1-2 day symposia instead? Should SAS educational courses be offered at the local sections if there is sufficient interest?

In March, many SAS members attended the Pittsburgh Conference. Volunteers at the SAS booth were successful in signing up more than 70 new members but an unfortunate incident resulted in the loss of many of the applications. As testament to the cutbacks many employers are imposing, we were short by a single vote in obtaining a quorum for the SAS Governing Board meeting at PittCon! This has been a continued problem in recent years which resulted in me establishing an ad hoc Internationalization and Regionalization committee to evaluate a regional governance structure where local sections would remain intact, but governing board delegates would come from 4-6 re-

gions. This would make the GB smaller, capable of greater in depth discussions and make it easier to insure a quorum. Regional governance would also afford non-US members the opportunity for involvement in governance.

During the spring, we had several personnel changes in the SAS office in Frederick, MD. SAS remains appreciative of the many positive contributions and the dedication of the staff who are no longer employees of SAS. We hired a new Executive Administrator, Bonnie Saylor, to provide administrative leadership. Bonnie has a BA in communications and an MS in public administration. She also has experience working for the American Association of Colleges of Osteopathic Medicine and is well-qualified to provide leadership to SAS office staff. Another new addition to the staff is SAS Administrative Affairs Associate, Victor Hutcherson who has a great deal of database and computer software and hardware experience. These two join Barbara Stull who has served SAS for more than 12 years. I think you'll find the current SAS office team efficient and helpful! You can learn more about them on the SAS Homepage on the World Wide Web (http://esther.la.asu.edu/sas/) or feel free to give them a call!

The project which is currently occupying most of my time as well as that of other SAS EC members, is planning future interaction between SAS and FACSS. As most of you know, SAS has provided administrative support to FACSS on a contractual basis since 1991. Although that relationship has proven to be professionally satisfactory, SAS has suffered some financial losses and experienced problems with conflict of interest, dilution of volunteer effort, diminished progress on important SAS initiatives, and divided staff loyalties. Significant effort has been spent talking with FACSS representatives trying to develop a mutually satisfactory arrangement. Hopefully I'll be able to give you an update on this in the next issue of the newsletter!

I never thought that being SAS President would be so time-consuming, such hard work, or so interesting. I would like to publicly acknowledge the contributions of the rest of the members of the Executive Committee (Kathy Kalasinsky, president-elect; Dave Coleman, past-president; Marvin Margoshes, treasurer; John Koropchak, secretary; Jim Holcombe, editor; Jim deHaseth and Dave Styris, membership education coordinators; and Mike Epstein, newsletter editor) without whose assistance and support, I would have run away in January! I think the future for SAS is very bright and I invite you to become more involved in the Society - we need your input. Feel free to contact me with any comments or questions related to SAS at: 301-504-8252 phone or Miller-Ihli@BHNRC.USDA.GOV email.

Introducing the New SAS National Office Staff

Bonnie Saylor (left), the SAS Executive Administrator, is former Director of Member Services of the American Association of Colleges of Osteopathic Medicine and a conference Associate for the National Association of Homebuilders. **Victor Hutcherson** (right), SAS Administrative Affairs Associate, is a former administrative assistant to the Vice-President of the American Association of Colleges of Osteopathic Medicine and a veteran of 20 years of military service in the U.S. Army. **Barbara Stull** (center) has been with the SAS National Office Staff since 1984.

Society Home Office News

Bonnie A. Saylor
Executive Administrator

Change is the impetus to progress, and the home office for the Society for Applied Spectroscopy in Frederick, Maryland has undergone some changes over the past several months. Several staff members have left the Society, but the new crew, made up of Victor Hutcherson, Administrative Affairs Associate, Barbara Stull, Administrative Assistant, and myself, is ready and willing to be of service.

Work continues in the office on existing projects, as well as new ones. The new SAS Membership Directory for 1995-96 has been sent to all members. The Directory, which has not been produced for a number of years, is an easy to read reference guide on members and society information We hope everyone finds it useful and just one of the many reasons for being a member of SAS.

In addition to the Directory, the office has been busy recruiting and processing new members. As Executive Administrator, I was pleased to be able to exhibit at the Rocky Mountain Conference on Analytical Chemistry in July. Plans are also being made for exhibiting trips to the International Conference on Raman Spectroscopy in Pittsburgh in August and the Eastern Analytical Symposium in New Jersey in November. Membership is what makes the Society tick, and these meetings are sure to entice more great people to join.

SAS will have a presence at the Federation of Analytical Chemistry and Spectroscopy Societies (FACSS) meeting in Kansas City and, as the official contractors for the FACSS meeting, we are diligently working to make this the best meeting ever.

Membership and subscriber renewal notices will be coming out this month, so watch your mail and be sure to renew early so you don't miss out on any issues of Applied Spectroscopy.

As the months progress, we will continue to strive to provide the quality of member service deserving of a professional society. We welcome your comments and questions, so feel free to call us at (301) 694-8122 or e-mail us at sasoffice@aol.com.

Report on Instrumentation Museum Activities

The Chemical Heritage Foundation building at 315 Chestnut St in Philadelphia.

Our first grant to promote the Museum Program at the Chemical Heritage Foundation's headquarters in Philadelphia has been received from the Perkin-Elmer Corporation. We are actively seeking grants from other sources including the Pittsburgh Conference backers. We trust that now that the first grant has been received officially, others will follow.

Six of the instruments that were shown at the 1994 Antiquities Exhibit at the Pittsburgh Conference have been in storage ever since. They will shortly be moved from storage to their permanent place at the Chemical Heritage Foundation's home and placed on display as the start of the Museum Program.

Ed Brame, Jr
July 1996

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Update from the Local Section Affairs Committee

On behalf of the Local Section Affairs Committee, it gives me great pleasure to announce the 1996 SAS Award Recipients.

The SAS Graduate Student Award recipient is Mr. Jeffrey A. Kinzer from the Ohio Valley Section. Mr. Kinzer is a graduate student at the Ohio State University under the direction of Prof. John Olesik. His research is in the area of CE-ICP optical emission and mass spectrometry for elemental speciation and more recently in the studies of ICPs using light scattering, emission and laser-induced fluorescence spectroscopy.

The Award is given to a graduate student in recognition of outstanding research in the area of spectroscopy. It consists of a plaque and an expense paid trip to the FACSS conference to accept the award.

I would also like to take this opportunity and to congratulate ALL the nominees. You are all winners by achieving everything you have to date!

Two Undergraduate Students were awarded the UNDERGRADUATE AWARD in APPLIED SPECTROSCOPY: Mr. Fassil Mesfin of the New York Section and Mr. Yu-Harn Chen from the Chicago Section. Mr. Mesfin performed research at SUNY, Old Westbury under the direction of Professor Judith Lloyd on "Fluorescence Spectroscopic Study of Isomeric Hydroxy and Methoxy benzoic Acids for Analysis of Atmospheric Peroxides". Mr. Chen did his research at Argonne National Laboratory under the direction of Dr. Jeffrey Gaffney on the topic of Chemiluminescent Detection of Air Pollutants".

The Award is granted to a junior or senior undergraduate student majoring in science. It consists of a one-year subscription to the Applied Spectroscopy Journal and a certificate.

I would like to encourage Local Sections and Research Advisors to nominate students for next year's Awards. It takes a bit of time to put the documents together but the reward is immeasurable. You will encourage and reward a student! In this time when everyone talks about motivating students to go into science you will actually do it - what better way to motivate and recognize their efforts and achievements!

The recipient of the William J.Poehlman award is the Chicago Section (I abstained!). The Award is granted to the Local Section which has contributed the most towards accomplishing the goals and ideals of the Society. It consists of a certificate and an honorarium of $200.00.

First, I would like to thank all the Section Chairpersons who nominated their Sections. If we could have more than one recipient the Award would be given to all the Sections nominated this year. Specifically, the following Sections deserve special recognition for their efforts and special programs: Northern California, Penn-York and Rocky Mountain.

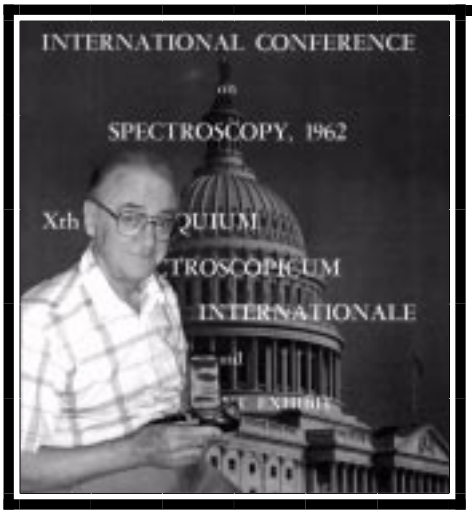
For the benefit of other Sections the following are some of their programs' highlights:

- diverse topics during the year for regular monthly meetings
- specialized workshop/conference/symposia
- monthly/quarterly newsletter
- joint meeting with other society
- (holiday) meeting/party in a museum or tour of labs i.e. something special
- Internet announcements; e-mail for correspondence
- coordinator position (contact for specific area to help out with the program)
- awards to local scientists/students
- outreach to high school students

If you would like to implement any of these activities, or simply need any suggestions for your Local Section, call the Chairs of the above mentioned sections or any member of the Local Section Affairs Committee.

It takes a lot of effort, dedication and time to successfully 'run' a Local Section. Thank you to all volunteers in ALL Local Sections; you make this Society a success.

Rina Dukor
Chairperson
Local Sections Affairs Committee
August 1996



Bourdon Scribner

by Mike Epstein and Marvin Margoshes. In the photo (left), Bourdon holds the gold medal he received from the New York Section of SAS in 1961.

Spectroscopists of today sit in front of their instrumentation, giving little thought to the pioneering work that brought it all about. The subject of this issue's ***Spectroscopist Profile*** is a man who was a true pioneer and innovator in the formative years of emission spectroscopy.

Bourdon F. Scribner is our living connection to the origins of quantitative spectrochemical analysis. Aside from a few scattered attempts that were not copied by others, quantitative analysis by emission spectroscopy had its beginnings in the early 1920's with key publications by Meggers and colleagues at the National Bureau of Standards (NBS). Bourdon joined Meggers group in 1927, and in a career spanning over 4 decades made several notable contributions to the art and science of emission spectroscopy.

Bourdon was born in April of 1910 in Westernport, Maryland. His early interest in science grew with the encouragement of his father, who was Chief of the Paper Section of NBS. At the age of 14, he built his family's first radio by winding a tuning coil around a Quaker Oats box and buying a crystal detector and earphones for less than 10 dollars, allowing his mother, an avid baseball fan, to listen to the 1924 World Series, the first and only ever won by the Washington Senators. Like many future chemists, he had a chemical laboratory at home, and recalls, among other experiments, generating bromine, undoubtedly to the consternation of his parents.

After graduating from Western High School in 1927, Bourdon took the Civil Service examination and on July 5, 1927, began his career at NBS where he was assigned to the Spectroscopy Section as a Minor Laboratory Apprentice at the princely salary of $900 per year. His first job assignment was to calculate wavelengths of spectra from measurements made by Carl C. Kiess and William F. Meggers. Dr. Meggers, Section Chief of the Spectroscopy Section, was to become his mentor and lifelong friend.

Dr. Meggers and his young assistant, Bourdon Scribner, examine a tube containing the world's supply of Lutecium (April 1930, The Washington Times)

Bourdon continued his education by attending evening classes, working towards a B.S. at George Washington University, which he obtained in 1933, followed by a M.S. in physical chemistry from the University of Maryland in 1939. His first publication came after about a year at NBS when he was named as a junior author of a paper with Dr.

Meggers on “Regularities in the Spark Spectrum of Hafnium.” It was to be followed by 72 more during his government career of 46 years.

After several months of learning to calculate wavelengths, the young apprentice was introduced to photographing spectra and searching for line pairs with similar characteristics as a first step to determining atomic energy levels. During this early period, Bourdon had the opportunity to meet a number of the pioneers in spectroscopy, including William W. Coblentz, the founder of modern infrared spectroscopy. He recalls that Dr. Coblentz often visited the NBS lab and usually had some aggravating problem to discuss with Dr. Meggers, who would listen patiently, nodding his head.

In 1933, Bourdon was put in charge of a laboratory in the Chemistry building dedicated to expanded work in analytical spectrographic analysis. A high-dispersion grating spectrograph was built, since none was available commercially, as well as other equipment for excitation of spectra and measuring spectral line intensities. Despite cutbacks in funds and personnel as the Great Depression grew worse, the laboratory persevered and in the following years performed analyses for a great number of clients in addition to the NBS Chemistry and Metallurgy Divisions, including the FBI (evidence material), the Treasury Department (proof gold) and the Department of Agriculture (rare earth elements in hickory leaves).

Bourdon recalls one humorous incident associated with the purification of the element gallium by Dr. James Hoffman. The spectroscopy laboratory was participating in the research, as well as other NBS laboratories. In gratitude for research support, Hoffman presented Frederick Bates, chief of the Polarimetry Section, with a beautiful pyramidal crystal of gallium. Bates proudly put the crystal on his desk for all to admire. Unfortunately, there was no air conditioning in those days and as the afternoon sun crept across his desk, the temperature rose and the crystal melted, the melting point of gallium being 29.78 ^{o}C (85.6 ^{o}F). Fortuitously, a photograph survived.

With the German invasion of Poland in September of 1939 and World War II looming on the horizon, attractive technical positions became available in industry. Bourdon was recruited as head of a laboratory in a magnesium plant and a considerable increase in salary. He accepted the offer, said goodbye to his friends, but never got out the door. He was suddenly surprised by a phone call from the NBS Director, Dr. Lyman Briggs, who told him he was needed at NBS in view of some highly important work, so he couldn’t leave. His immediate reaction was “they can’t do this to me, this is a free country, etc.” But they could ... the new magnesium plant was a defense plant controlled by the U.S. government.

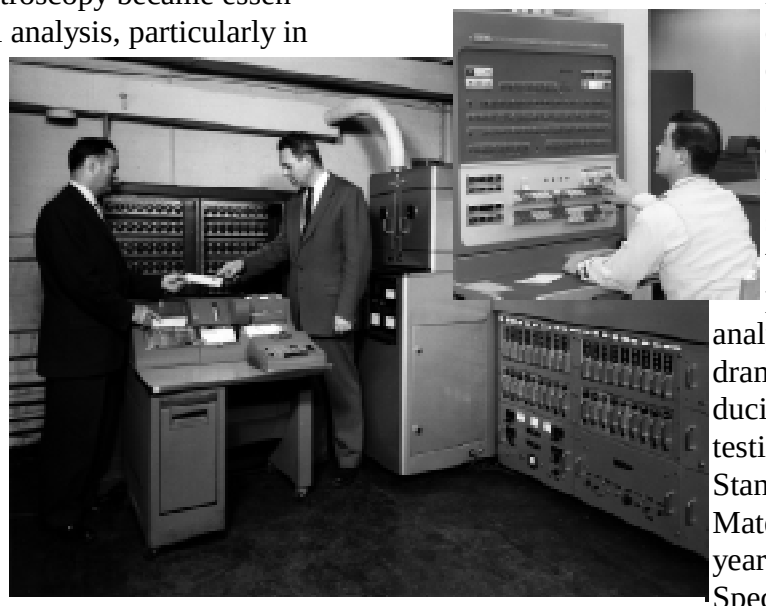
While he could not be told the substance of *the highly important work*, clues began to surface. Uranium oxide samples bearing unusual identifying names began to appear for analysis. It was the beginning of research into the development of the atomic bomb, and the spectroscopy lab at NBS became a part of the Manhattan Project when it was established two years later.

The uranium spectrum is extremely complex, with an intense and almost continuum background. It was impossible to directly determine impurities in the presence of the uranium spectrum. Bourdon and Harold Mullin developed a method to volatilize the impurities from the electric arc before the uranium matrix volatilized, allowing the impurity spectra to be easily observed and quantified. Gallium was used as the carrier element to aid in the impurity volatilization, and the newly-developed *carrier-distillation spectrographic method* was found to allow the observation of 33 impurity elements in uranium, including the critical element boron, determined at concentrations down to 1 ppm. The method was employed throughout the Manhattan Project, along with chemical separation methods, to spectrographically determine 65 elements in uranium-base materials. It played a critical part in the devel-

opment of the atomic bomb, and undoubtedly saved the lives of many Americans and Japanese who would have otherwise died in an invasion of Japan.

The carrier-distillation method found immediate application in the analysis of other materials by arc emission spectrography, and is also the basis of the matrix-modification technique used today in graphite furnace atomic absorption spectroscopy.

In addition to his work on the Manhattan Project, Bourdon was intimately involved in the development of spectrographic standards. With the growth of industrial production during the war years, spectroscopy became essential to speed up control analysis, particularly in the production of steel. NBS had produced Standard Samples of steel chips for chemical analysis, but something more was needed. In collaboration with Committee E-2 on Spectrographic Analysis of the ASTM, Bourdon and other NBS colleagues developed a series of short-form rod sections that founded the NBS spectrographic standard sample program. For his work in these areas, Bourdon was awarded in 1951 the Silver Medal of the U.S. Department of Commerce, *"for very valuable contributions to science and technology in the field of spectrochemical analysis, including meritorious authorship."*



Bourdon Scribner and Robert Michaelis near the data acquisition system for the NBS emission spectrometer. Shown at the upper right is the SEAC computer, which processed spectrometric data recorded on the punch cards. (NBS, 1957)

In 1947, Bourdon's group was assigned to the Chemistry division and became the new Spectrochemistry Section. However, he retained his ties to Dr. Meggers' Section by providing chemical laboratory facilities and by completing some spectroscopic research already in progress. Over the next few decades, the Section expanded into the new analytical areas of x-ray fluorescence spectrometry, electron probe microanalysis and spark-source mass spectrometry.

Bourdon was certainly among the pioneers to use computers in spectrochemical analysis. Some of the early instrumentation is shown in the photographs below, taken in 1957. Electrical signals from the photodetector array of the emission spectrograph were converted to digital form and recorded on punch cards, which were taken to the SEAC computer (Standards Eastern Automatic Computer) for processing. Despite the archaic form of data transport (the SEAC was a good walk from the emission spectrometer), the improvement in analysis time was dramatic, greatly reducing the tedium of testing spectroscopic Standard Reference Materials. In later years, the NBS Spectrochemical Analysis Section was to make major contributions to the use of computers in spectrochemical analysis.

During the 1950's and 1960's, Bourdon continued as head of the Spectrochemistry Section of the Chemistry Division at NBS, and in 1958 was Acting Chief of the Spectroscopy Section of the Atomic and Radiation Physics Division as well. He actively promoted and advanced the science of emission spectroscopy through his activity in professional and standards organizations and his research at NBS. During this period he received the ASTM

Award of Merit (1958) for distinguished service to the Society, the Award of the Spectroscopy Society of Pittsburgh (1959) for contributions to fundamental and applied spectroscopy, the Annual Award of the New York Section of the Society for Applied Spectroscopy (1961) for distinguished work in spectroscopy, and the Gold Medal Award of the U.S. Department of Commerce (1969) for distinguished services to the nation's technology through the development of the methodology of spectrochemical analysis. He was made a Fellow of the Optical society of America (1961) and an Honorary Member of the Groupment pour l'Avancement des Methodes Spectrographique (Paris, 1962). He was also chairman of the Washington Section of the American Chemical Society (1957), editor of the Capital Chemist (1954-55), and chairman of the Baltimore-Washington Section of the Society for Applied Spectroscopy (1966-67).

Bourdon was also involved in one of the most heated controversies to face NBS in its entire history. Since the years immediately after World War I, NBS had evaluated a series of "miracle" battery additives that were claimed to revive dead batteries. By the 1930s, NBS had evaluated hundreds of these preparations and none showed any notable effect on either battery life or performance. In 1948, the manufacturers of a battery additive called "Protecto-Charge", later called "AD-X2", requested that NBS evaluate their product on the grounds that it was an exception to previous findings on such additives. A year later, as part of a program on the properties of batteries, battery additives were again evaluated by NBS, including AD-X2. In a departure from usual practice, NBS specifically identified AD-X2, which was simply a mixture of common salts (magnesium and sodium sulfates) as having no special merits. While these salts normally sold for 22 cents a pound, when packaged as a proprietary battery additive, at $3 a packet, they cost almost $20 a pound. This report triggered a flood of mail to Congress from outraged distributors of AD-X2. By the end of 1951, 28 Senators and 1 Congressman had sent inquiries to NBS about AD-X2. Then, in 1952, a national magazine reported that laboratory tests of AD-X2 made at MIT were at variance with those done at NBS. In the resulting furor, the Director of NBS, Dr. Allen Astin, was relieved of his post. But because of the resulting press attack on the Administration for dismissal without a hearing, and confronted with the reaction of scientists and scientific organizations, the dismissal order was rescinded pending a congressional hearing, and the National Academy of Sciences appointed a committee to appraise the work of NBS on AD-X2. The committee found that the MIT tests were "not well designed" and that the NBS staff was fully competent, the quality of the work was excellent, and supported "the position of the Bureau of Standards that the material is without merit." Director Astin was returned to his position and AD-X2 faded into oblivion. Bourdon's activities involved the spectrochemical characterization of AD-X2, summarized in the newspaper article shown here.

After Argument

FTC Learns Of AD-X2 Ingredients

Associated Press

The Government succeeded yesterday, over strong objections, in placing a chemical analysis of the disputed battery additive AD-X2 in the record of a Federal Trade Commission hearing.

The analysis was submitted by Borden S. Scribner, chief of the spectrochemistry section at the National Bureau of Standards.

Jess M. Ritchie, president of Pioneers, Inc., Oakland, Calif., manufacturers of the additive, scored a partial victory, however, in his effort to keep the ingredients a secret. He prevailed upon Examiner William L. Pack to rule that Scribner's analytical exhibits be regarded as "confidential."

Nevertheless, Scribner was permitted by Pack to place in the public record the list of substances his analyses showed to be present in AD-X2.

The commission has charged Ritchie and the corporation with advertising falsely the benefits auto batteries may receive through use of AD-X2.

Scribner testified the trace elements found in AD-X2 were generally the same as those found in tap water. In reply to a question as to whether the trace elements had been added separately by the manufacturer or "were they there to start with" in such principal ingredients of the additive as magnesium sulphate and sodium sulphate, Scribner said:

"In my opinion they were not added but were present in the salts used in making the product."

He added that similar elements are found in lead acid auto batteries now on the market. At the end of Scribner's testimony, Pack recessed the hearing until September 8.

From the Washington Post

During the 1960's, Bourdon had the op-

portunity to attend a number of international conferences. One that he recalled vividly was the 1965 IUPAC meeting in Moscow. As a plenary speaker, he and his wife were met at the airport by a limo, and had two students to guide them around Moscow. When the conference organizers informed him that they needed a copy of his typed presentation immediately, he told them he had only one copy. Could they make a machine copy? No, but they had another solution. They borrowed his copy and had some functionary type it overnight, returning it in the morning.

I suspect that Bourdon is perhaps most proud of his activities as General Chairman of the International Conference on Spectroscopy that was held at the University of Maryland from June 18-22, 1962. The Baltimore-Washington Section of SAS was host to this international conference, the Tenth Colloquium Spectroscopicum Internationale, which was also designated the **First National Meeting of the Society for Applied Spectroscopy**. The local section contributed $500 in seed money and many eager helpers to make the meeting a smashing success. The $5000 of surplus funds from this meeting were donated to establish a fund for use by other Sections of the Society sponsoring national meetings in succeeding years. National meetings have been held annually since that time.

Velmer Fassel offers a toast to Bourdon and Sally at their Wedding (photo by Carl Leistner)

But the most wonderful outcome of this meeting for Bourdon was that he met Sally Mount of the U.S. Customs Laboratory, who was to become his wife. Sally was a member of the Baltimore-Washington Section who was highly effective at recruiting new members, and she became one of the volunteers for the Colloquium. She and Bourdon were married in February of 1963.

In addition to his many accomplishments in spectroscopy, Bourdon has maintained his youthful interest in water sports and trains. In his 1956 article in the Capital Chemist titled "Sea-Going Spectroscopist", Roger Bates describes the yachting hobby of the "successful spectrochemist and bachelor bon-vivant." "Captain Scribner is a harsh leader; by strict order, beer is withheld from the crew until the course in finished." Bourdon purchased a 39-foot double-cabin cruiser in 1953, on which he spent many of his leisure hours. He was a member of the United States Power Squadrons serving in several positions in the Potomac River Power Squadron, including Commander in 1970-71. He and Sally were quite involved in boating throughout the sixties and seventies.

Today, Bourdon's activities center around the Washington D.C. Chapter of the National Railway Historical Society. In 1979, the Chapter purchased the Dover Harbor, a heavy-weight Pullman car built in 1923 and in active first-class service until 1966. The car has six double-bedrooms and a buffet and is fully Amtrak certified for use on current-day trains. Fully restored, the car is available for charter and can be coupled to an Amtrak train, taking you anywhere on the Amtrak system. Bourdon is currently chairman of the Dover Harbor Fund, which raises money to continue restorations and improvements of the car. Sally is Charter Agent for use of the car. The philosophy of the Chapter is to present the living history experience of riding in a luxury Pullman as it was, not just to have a museum piece.

As befits a

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Governing Board Meeting, March 5, 1996
Chicago, Illinois

I. CALL TO ORDER
A regular meeting of the Governing Board of the Society for Applied Spectroscopy was called to order at 7:54 PM on March 5, 1996 at the Westin Hotel in Chicago, Illinois, by past-President Dave Coleman, who passed the gavel to current President Nancy Miller-Ihli.

II. INTRODUCTIONS
Nancy Miller-Ihli then introduced the Executive Committee members and Society staff.

III. ROLL CALL

Executive Committee:
David Coleman (Past President)
Jim de Haseth (Membership Ed Coordination)
James Holcombe (Journal Editor)
Kathy Kalasinski (President-Elect)
John A. Koropchak (Secretary)
Marvin Margoshes (Treasurer)
Nancy Miller-Ihli (President)
Eileen Skelly-Frame (Parliamentarian)

Local Sections:
A roll call of the local section delegates indicated that a quorum was not achieved. Twenty sections were represented. Twenty-one are required for a quorum. The Local Section Delegates present were:

Section	Delegate(s)
Baltimore-Washington	Fran Ptak
Chicago	Douglas Shrader, David Lankin
Cincinnati	Vahid Majidi
Cleveland	Dave Fedor
Delaware Valley	Ed Brame
Detroit	Patsy Coleman, Roscoe Carter
Houston	Andrew Scheie
Indiana	Elizabeth Shanks
Kansas City	Karme Galle
New York	John Fiorino, Marvin Margoshes
N. California	Ed Peck, Nathan Haese
Ohio Valley	Kurt Thaxton
Penn-York	Duane Johnson
Pittsburgh	Jonathan Talbott
St. Louis	David McCurdy
S. California	Jerold Kacsir, Warren Vidrine
Arizona	Sean Madden
Piedmont	James de Haseth, Ron Williams
Toledo	Ray Hertz
Snake River	Peter Griffiths

IV. MEETING RULES OF ORDER
The President stated that Roberts Rules of Order shall be the rules of order for the meeting.

V. APPROVAL OF THE MINUTES FOR THE PREVIOUS GOVERNING BOARD MEETING, OCTOBER 17, 1995
It was moved that the minutes of the previous meeting be approved as published in the Newsletter. The motion was seconded and approved.

VI. SECRETARY'S REPORT
None.

VII. TREASURER'S REPORT
(A) Past-treasurer Ed Peck described the details of the 1995 budget which resulted in a $92,000 deficit.
(B) Treasurer Marvin Margoshes indicated that the deficit in the Membership Education budget would be made up from the surplus fund for Membership Education. The Journal Editor is reducing page numbers this year to reduce the cost of publishing the Journal. Marvin Margoshes moved that dues for regular members, student members and retirees be increased by $5 each for 1997. The Parliamentarian indicated that the motion could be voted upon and implemented without a quorum, but that the decision could be rescinded at the next meeting at which there is a quorum. The motion was approved.

VIII. PRESIDENT'S REPORT (appended)

IX. EXECUTIVE ADMINISTRATOR'S REPORT (appended)

X. JOURNAL EDITOR-IN-CHIEF'S REPORT (appended)
Jim Holcombe described details of the Journal. He indicated that the higher travel costs for the Journal were due to the search for a new printer last year and that this process will result this year and beyond in the reduction in costs of production by $20,000-40,000 per year.

XI. NEWSLETTER EDITOR'S REPORT (appended)

XII. MEMBERSHIP EDUCATION COORDINATOR'S REPORT (appended)

XIII. NATIONAL SAS COMMITTEE REPORTS

A. Awards - John Koropchak read a letter from the St. Louis Section nominating Roy Koirtyohann for honorary membership. It was moved that SAS award Roy Koirtyohann honorary membership and the motion was approved.

B. Constitution and Bylaws None

C. Local Section Affairs (appended)

D. Membership (appended) - Elaine Skelly-Frame described activities for membership including: (a) SAS will staff booths at FACSS, EAS, Rocky Mountain Conference and the International Conference on Raman Spectroscopy, (b) there will be a student member promotion through faculty at universities, and (c) there will be a postcard mailing to members as a reminder of member benefits.

E. Membership Education None

F. Nominations - Joseph Caruso and Paul Farnsworth were nominated for the office of President of the Society. A motion to close the nominations was approved.

G. Publications (appended) - The committee recommended that Jim Holcombe be retained as Editor-in-Chief for another three years. Nancy Miller-Ihli reported that the Executive Committee approved the recommendation.

H. Publicity None

I. Tour Speaker Program - Alex Scheeline described the activities of the committee which included a survey of local sections for preferences with regard to tour speakers.

J. William F. Meggers Award - Jim Holcombe indicated that the selection of the awardee(s) would be made by mid-April.

K. Lester W. Stock - Jo Ann Brown indicated that Richard Keller was chosen for the award.

L. Lippincott Award - Jo Ann Brown indicated that G. Zerbe was chosen for the award.

XIV. AD-HOC REPORTS

A. Internationalization (appended)

B. World Wide Web - Nancy Miller-Ihli indicated that the home page had significant traffic, that the page will likely include a format for the membership directory, and that the possibility of an on-line applications newsletter is under consideration.

C. Museum (appended)

XV. AFFILIATE'S REPORTS

A. CESSE: Published in journal.

B. CNIR: Published in journal.

XVI. LIAISON REPRESENTATIVE'S REPORT

Patsy Coleman indicated that dates for 1997 FACSS conference conflicted with this year's CSI meeting and that FACSS is considering changing the dates and site.

XVI. OLD BUSINESS

A. Membership Directory - Nancy Miller-Ihli indicated that the Membership Directory is to be prepared this year.

XVII. NEW BUSINESS - None.

XVIII. DATE AND TIME OF NEXT GOVERNING BOARD MEETING

It was moved that the next Governing Board Meeting be held at FACSS on October 1, 1996 in Kansas City, Missouri. The motion was seconded and approved.

XIX. ADJOURNMENT

The meeting was adjourned at 9:39 P.M.

Respectfully submitted
John A. Koropchak, SAS Secretary.

Calendar of Meetings

1996

Sept 30 - Oct 4
FACSS XXIII, Kansas City, MO
http://facss.org/info.html

1997

March 16 - 21
48th PITTCON, Atlanta, GA
http://www.pittcon.org/

Sept 21-26
XXIXth CSI
Melbourne, Australia
http://www.latrobe.edu.au/www/xxxcsi/

Oct 25-31
FACSS XXIV, Providence, RI

1998
March 1 - 6
49th PITTCON, New Orleans, LA
Oct 11 - 16
FACSS XXV, Austin, TX

1999
March 7 - 12
50th PITTCON, Orlando, FL
Oct 24-29
FACSS XXVI, Vancouver, BC

Treasurer's Report

SOCIETY FOR APPLIED SPECTROSCOPY
BALANCE SHEETS
For the Years 1993 Through 1995

	1995 *	1994	1993
Assets			
Cash, Society Checking	$544,314	$409,845	$580,919
Cash, Society Savings	4,126	5,557	47,556
Cash, Lippincott Accounts	26,409	26,161	19,813
Treasury Bills	45,000	189,789	-----
Accounts Receivable	49,132	[illegible]	[illegible]
Taxes Receivable	2,770	1,771	22,691
Prepaid Expenses	7,008	2,411	-----
Total Current Assets	684,789	688,885	691,947
Property and Equipment	32,798	29,971	26,100
Less: Accumulated Depreciation	(24,104)	(20,210)	(15,397)
Net Property and Equipment	8,694	9,761	10,703
Total Assets	[illegible]	[illegible]	[illegible]
Liabilities and Fund Balances			
Accounts Payable	$111,189	$83,783	$59,782
Due to Inactive Local Sections	14,027	14,027	14,027
Accrued Liabilities	4,998	2,131	1,287
Income Taxes Payable		3,370	-----
Deferred Revenue	379,197	320,037	343,210
Total Current Liabilities	[illegible]	423,358	418,316
Fund Balances			
Lippincott Accounts	26,409	26,161	19,813
Society Accounts	158,653	250,127	264,521
Total Fund Balances	184,062	276,288	284,334
Total Liabilities and Fund Balances	$693,483	$698,646	$702,650

* The 1995 data are unaudited; those for prior years have been derived from information supplied by our auditor.

SOCIETY FOR APPLIED SPECTROSCOPY
Treasurer's Unaudited 1995 Report and 1996 Adopted Budget

INCOME:

BUDGET CATEGORY	1994 ACTUAL	1995 BUDGET	1995 PRELIMIN.	% OF BUDGET	PROPOSED 1996 BUDGET	See Note Number
Membership Dues						
Regular Memberships	180,093.00	179,300	160,828.00	89.7%	178,540	1
Corporate Sponsors	15,900.00	19,000	17,400.00	91.6%	15,600	2
Student Memberships	5,635.00	5,700	5,410.00	94.9%	7,395	3
Retiree Memberships	3,400.00	3,300	3,240.00	98.2%	4,300	4
Postage & Promotions			12,595.00			5
Subtotal	205,028.00	207,300	199,473.00	96.2%	205,835	
Journal Income						
Advertising	240,093.36	240,000	244,534.08	101.9%	228,000	
Domestic Subscriptions	129,121.00	129,600	137,529.00	106.1%	171,875	6
Foreign & Canadian Subscriptions	125,260.36	146,400	145,455.40	99.4%	205,070	7
Air Mail Subscriptions	11,085.00	12,000	4,748.00	39.6%		8
Reprints	18,825.00	30,000	32,364.28	107.9%	24,000	
Page Charges	6,305.49					
Contributions	5,525.75	4,000	100.00	2.5%	5,000	
Back Issues	5,362.00	5,000	5,836.00	116.7%	5,000	
Mailing Lists	3,517.30	3,500	2,052.51	58.6%	3,000	
Miscellaneous	-21.08		366.00			
Subtotal	545,074.18	570,500	572,985.27	100.4%	641,945	
Society Activities						
Membership Education	32,575.00	30,000	38,013.00	126.7%	37,350	9
Award Receptions	3,500.00	4,000		0.0%		
Videotapes, Jewelry, T-Shirts	600.00					10
Subtotal	36,675.00	34,000	38,013.00	111.8%	37,350	
Other Income						
FACSS Contracts	42,666.64	47,000	47,833.36	101.8%	51,500	
FACSS Extras	1,248.00					
Bank Interest	16,775.73	14,000	21,203.54	151.5%	17,000	
T-Bill Interest	5,675.00	6,000	9,370.75	156.2%	5,000	
Royalities	5,963.84	6,000	2,595.27	43.3%	6,000	
Lippincott Interest	1,504.64	2,000	1,372.94	68.6%	1,500	
Lippincott Contributions	4,167.62		2,500.00			
Awards Contributions	1,470.00		840.00		2,000	
Miscellaneous	-607.00	1,000	1,275.00	127.5%	500	
Subtotal	78,864.47	76,000	86,990.86	114.5%	83,500	
TOTAL INCOME	865,641.65	887,800	897,462.13	101.1%	968,630	

SOCIETY FOR APPLIED SPECTROSCOPY
Treasurer's Unaudited 1995 Report and 1996 Adopted Budget

EXPENSES:

BUDGET CATEGORY	1994 ACTUAL	1995 BUDGET	1995 PRELIMIN.	% OF BUDGET	PROPOSED 1996 BUDGET	See Note Number
Journal Expense						
Journal Publication	318,726.74	323,500	381,973.46	118.1%	315,800	11
Journal Advertising	172,172.82	172,200	196,688.34	114.2%	185,000	11
Salaries/Benefits (S. A. S.)	27,535.20	31,889	27,624.28	86.6%	28,631	
Journal Services (U. of Texas)	14,955.54	17,940	29,917.67	166.8%	18,840	
Operating (Rent, Phone, Supplies)	7,474.65	8,800	6,653.87	75.6%	9,800	
Travel	5,515.01	9,000	12,448.41	138.3%	9,000	
Postage	5,990.69	7,000	4,638.12	66.3%	7,000	
Editor Honoraria	7,000.00	7,000	7,000.00	100.0%	8,000	
Furniture & Equipment	2,837.28	2,500	1,122.36	44.9%	500	
Capitalization	-1,519.00	-1,500	-794.89	53.0%		
FICA, etc.	4,349.79	2,440	2,225.48	91.2%	2,190	
Editorial Board	1,373.28	1,500	607.41	40.5%	1,500	
Miscellaneous Expenses	2,229.14	2,500	1,511.53	60.5%	2,968	
Subtotal	568,641.14	584,769	671,616.04	114.9%	589,229	
National Office						
Salaries/Benefits	31,421.82	42,509	38,448.33	90.4%	38,426	
Operations (Rent, Util., Phone, etc.)	19,565.75	19,450	18,285.07	94.0%	22,500	12
Postage	10,457.81	11,500	11,135.70	96.8%	12,500	
Printing	9,116.15	8,000	9,458.63	118.2%	8,000	
Travel	5,246.27	5,000	5,856.08	117.1%	10,000	
Accountant/Auditor Fees	5,460.00	6,000	5,854.98	97.6%	7,000	
Health Insurance		5,400	5,024.84	93.1%	7,200	13
Furniture & Equipment	3,329.98	1,500	1,331.96	88.8%	9,000	14
Capitalization	-2,352.00	-1,000		0.0%	-6,300	
FICA, etc.	2,403.80	3,252	3,097.50	95.2%	2,940	
Supplies	3,834.47	4,000	4,156.21	103.9%	5,000	
Conference Promotion	530.96	3,000	3,519.10	117.3%	4,000	15
Insurance	471.45	800	1,151.34	143.9%	1,200	
Employee Training	197.01	1,000	591.10	59.1%	1,000	
Temporary Help	771.44	200	495.70	247.9%	200	
Miscellaneous/Contingencies	2,277.52	850	1,467.77	172.7%	1,988	16
Subtotal	92,732.43	111,461	109,874.31	98.6%	124,654	
Member Services						
Local Section Dues Distrb.	29,076.50	31,505	31,199.16	99.0%	29,814	17
Office Salaries/Benefits	16,043.16	18,000	22,277.79	123.8%	23,533	
Enhanced Member Services					20,000	18
Tour Speaker Program	13,985.90	13,000	6,164.53	47.4%	10,000	
Newsletter	5,883.83	10,500	11,409.11	108.7%	11,500	19
SAS Awards Receptions	5,704.55	5,000	5,100.03	102.0%	7,000	
Honoraria and Awards	5,795.31	6,500	6,708.65	103.2%	4,750	
Membership Committee	2,876.14	3,000	3,525.05	117.5%	5,000	20
Internet Services					2,000	18
FICA, etc.	1,227.30	1,377	1,794.76	130.3%	1,800	
Governing Board	172.77	250	456.19	182.5%	500	
New Local Sections		1,000		0.0%	1,000	
Subtotal	80,765.46	90,132	88,635.27	98.3%	116,897	

SOCIETY FOR APPLIED SPECTROSCOPY
Treasurer's Unaudited 1995 Report and 1996 Adopted Budget

EXPENSES (Continued):

BUDGET CATEGORY	1994 ACTUAL	1995 BUDGET	1995 PRELIMIN.	% OF BUDGET	PROPOSED 1996 BUDGET	See Note Number
Membership Education						
Short Courses	36,818.43	27,500	44,514.36	161.9%	30,300	
Workshops					5,000	21
Office Salaries/Benefits	2,086.20	2,237	1,497.12	66.9%	1,985	
Membership Education Committee	699.27		87.00		3,600	22
FICA, etc.	159.59	171	120.61	70.5%	152	
Student Scholarship	150.00					
Subtotal	39,913.49	29,908	46,219.09	154.5%	41,037	
FACSS Admin., Bookkeeping & Exhibits						
Salaries/Benefits	37,801.02	38,192	40,084.59	105.0%	42,030	
Rent	1,800.00	1,800	1,800.00	100.0%	3,600	
FICA, etc.	2,891.80	2,922	3,229.32	110.5%	3,215	
Other Expenses	467.62	500	-1,338.20	-267.6%	500	
Subtotal	42,960.44	43,414	43,775.71	100.8%	49,345	
Officers and Committees						
Officers	7,482.54	10,000	9,836.97	98.4%	12,550	
Executive Committee	2,886.21	4,000	3,429.78	85.7%	2,000	
Retreat	4,552.72		1,511.57		5,500	
Publicity Committee		100		0.0%	2,000	
Museum Copmmittee	1,152.50	1,500	1,676.39	111.8%	1,500	
Publications Committee		100		0.0%	500	
Review Committee	2,083.11					23
Other Committees	-628.00	100	2,200.28	2200.3%	300	24
Subtotal	17,529.08	15,800	18,654.99	118.1%	24,350	
Other Expenses and Adjustments						
Bank Charges	6,861.83	7,000	5,395.53	77.1%	6,500	
Depreciation & Losses	4,813.00	4,000	3,894.00	97.4%	5,000	
MD Unemployment Insurance	672.66	800	in FICA lines		700	
Accrued vacation	844.76	500		0.0%	500	
Lippincott Award			1,575.00			
Misc. Lippincott Expenses	225.00		50.00			
Subtotal	13,417.25	12,300	10,914.53	88.7%	12,700	
TOTAL EXPENSES	855,959.29	887,784	989,689.94	111.5%	958,212	
INCOME LESS EXPENSES	9,682.36	16	-92,227.81		10,418	
Provision for Income Taxes	17,728.54				4,000	
INCOME AFTER TAXES	-8,046.18	16	-92,227.81		6,418	
Beginning Fund Balances	284,334		276,288			25
Ending Fund Balances	276,288		184,060			25

SOCIETY FOR APPLIED SPECTROSCOPY
Treasurer's Unaudited 1995 Report and 1996 Adopted Budget

Note 1: 1996: 2,300 U. S., 60 Canada, 228 other countries (July 1995: 2,399 U. S., 292 all others).

Note 2: 1996: 8 Sustaining, 1 Supporting, 18 Contributing (July 1995: 31 total).

Note 3: 1996: 324 U. S., 9 Canada, 10 other countries (July 1995: 337 U. S., 21 all others).

Note 4: 1996: 211 U. S., 4 other countries (July 1995: 209 U. S., 6 all others).

Note 5: In 1995 we kept promotional dues and mailing surcharges separate from regular dues.

Note 6: 625 in 1996.

Note 7: 1996: 74 Canada, 512 all other countries.

Note 8: Included in Foreign & Canadian Subscriptions in 1996 Budget.

Note 9: 1996: 3 courses at Pittcon and 3 at FACSS, 15 students per course.

Note 10: Included in Other Income / Miscellaneous in 1995 & 1996.

Note 11: New printing contract expected to result in lower printing costs in 1996.

Note 12: 1996: Includes expanded office space.

Note 13: Covered 3 employees in 1995; adds one additional employee in 1996.

Note 14: In 1996 a new copier and a paper FAX machine.

Note 15: 1996: Includes the winter ICP Conference.

Note 16: Includes organizational dues.

Note 17: 1996 based on projected membership.

Note 18: New services for 1996; includes directory.

Note 19: Includes equipment for new editor.

Note 20: 1996: Extra programs to increase membership.

Note 21: 1996: Specialized workshops at FACSS.

Note 22: 1996: Includes travel expenses for Membership Education Coordinator.

Note 23: Committee was eliminated in Bylaws revision.

Note 24: 1995 costs are for Constitution and Bylaws revisions.

Note 25: Values are rounded.

Ed Peck, Past-Treasurer
Marvin Margoshes, Treasurer

News from the New York Section

TWO UNDERGRADUATE STUDENT AWARDS

At its May meeting, the New York Section gave Undergraduate Student Award to two students at the College of Saint Elizabeth, Morrtistown, NJ. The students, their research advisors, and the titles of their research projects are:

- Miss Kimberley Shuler (Asst. Prof. Kimberley Grant): Experimental and Theoretical Investigations of the Structure of n-Propyl Ether
- Miss Grisel Valdeviezo (Sistser Marian Jose Smith): Variations in the Secondary Structure of DNase II

Each student received $500, an award certificate, and a one-year membership in SAS. Each of the research advisors also received a one-year membership. The Section ordinarily selects one student each year for this award. Two were chosen this year because both were equally qualified.

President's Report

Like all societies, SAS faces some interesting challenges in the 1990's but we have several exciting activities planned for 1996 and I'll give you a brief update on what is happening in this report.

First, the SAS Executive Committee (E.C.) met for a retreat in Baltimore, in January to focus on what the most important initiatives for the society should be. It was a very beneficial meeting and we had both a facilitator (John Hook of Mt. St. Mary's College) to help us with the process and we also had a non-profit consultant (Barbara Meyers who worked for ACS in the past) to provide us with some insights relative to membership promotions. Tasks were defined and responsibilities for moving forward were assigned to each of the participants. Examples of some of the tasks I am involved with include: 1. Expanding the program for journal discounts to included wider variety of journals (presently JAAS, SAB, and Anal. Chem. Are available); 2. Task the Publicity Committee to increase publicity related to SAS job placement services and to expand interactions with various conferences; 3. Task the Awards Committee to expand the awards program; 4. Task the World Wide Web Committee to expand the usage of the WWW.

Another very exciting project which we started last fall relates to expansion of SAS membership. I sent a charge to the Internationalization and Regionalization Committee (Eileen Skelly Frame, chair) to evaluate the benefit of increasing international membership. I also asked them to evaluate the possibility of moving to regional governance to avoid the huge problems we have in gaining a quorum for SAS governing board meetings. We will receive a preliminary report at this PittCon 96 meeting.

I wanted to specifically mention the fact that committees have the benefit of having in hand in the newly revised section of the SAS handbook appropriate to their committee. We owe a huge debt of gratitude to Peggy Dean and Patsy Coleman for all of the efforts which went into the completion of the updated handbook! I am sure this document. will prove to be extremely useful. Another area where there is significant activity is in membership education. We are fortunate to have Dave Styris on board as coordinator-elect working with Jim de Haseth (coordinator) to develop some minicourses to supplement our current educational programs. These mini-courses would be reasonably priced, ½ day courses on a particular topic and will be offered at conferences such as FACSS and PittCon. Since SAS's objective is "to advance and disseminate knowledge and information concerning the art and science of spectroscopy and other allied sciences..." it seems to me to be particularly important for us to continue to provide educational opportunities to our colleagues.

I wanted to specifically comment on the SAS Spectrum which is the SAS newsletter. Mike Epstein, as our new newsletter editor is carrying on the tradition of excellence of his predecessors while giving this publication a new "face". You'll notice you will now receive the newsletter bundled with your journal and I think you'll find the new format exciting!

SAS is very fortunate to have a large cadre of volunteers who, working with the---SAS office, help maintain the vitality of the Society. It's clear that the cost of doing business continues to increase and that we need to be fiscally responsible. Our finances are not in nearly as good a shape as in previous years and we all need to help with cost containment. Our primary sources of income are memberships and journal advertising and despite the strong efforts on the part of the membership committee and the SAS office, membership numbers are not increasing while inflation is. Please do your part to help us to recruit new members! I can assure you that the E.C. and the SAS office are doing their part to try to cut costs and sell journal advertising!

Finally, 1996 marks the 50th anniversary of *Applied Spectroscopy*. *In* honor of this, we will be hosting a special SAS poster session at FACSS in Kansas City. Each SAS member will receive an invitation to participate in this sociable, scientific event. Undergraduate and graduate students who participate will have their posters considered for competition and 4 student winners will be recognized. Jim Holcombe and Bruce Chase have agreed to provide plaques and complimentary 1-year memberships to the student award winners. It's an event that's sure to be both scientifically stimulating and a lot of fun. I hope you'll join us!!

If you have suggestions relative to the Society, please send me or any one of the E.C. Members an email or give us a call. You'll find our phone and fax numbers, and email addresses in the front of the journal. Thanks!!

Nancy Miller-Ihli
SAS President

Executive Administrator's Report

Membership: The total 1996 membership as of February 19th was 2,748. On the third renewal notice, we decided to experiment; we sent the notices via different avenues - fax-blast, e-mail, and first-class regular mail. The most effective method was the fax-blast. It appears that people look at their faxed mail quickly and respond almost within 24 hours. Hopefully, by next year we will have fax numbers for most SAS members, and this method will be a more effective tool. The average cost is approximately $.50 each, versus $.45 per mailed renewal notice (paper, envelope, and postage).

We have been working with the Eileen Skelly Frame, Chairman of the Membership Committee and the Executive Committee on different promotions. Most of the promotions will be covered in the Membership Committee's report.

Accounting: Due to the number of projects to be completed prior to Pittcon, the audit was moved to April. We appreciate the Executive Committee's support in delaying this action.

This year the office will be more actively involved in budgetary concerns. Financial statements will accompany each monthly report to the Executive Committee, along with any forecasting information that we can provide. In conjunction with our accountant, we have developed a more effective mechanism to provide the Executive Committee with budget forecasting.

Local Sections: Our office continues to work closely with the local section officers, establishing open lines of communication to foster new membership ideas, and providing networking opportunities via breakfast meetings, list server, and newsletter.

Conferences: This year the Board will approve those conferences - apart from FACSS, EAS, and Pittcon which SAS will have a booth. This will allow us a more cost-effective plan for membership promotions, office staffing, and determination of journal printing runs. The Society had a booth at the Winter Plasma Conference which proved very beneficial.

FACSS Conference: The office continues to work in accordance with the FACSS contract with the 1996 Kansas City committees. Upcoming FACSS Conference locations will be: 1997 - Providence, Rhode Island- 1998 Austin, Texas; 1999 - Vancouver. The FACSS contract is up for renewal this year.

Upcoming Projects: Our office will be working on the 1996 Membership Directory; various membership promotions in conjunction with planned meetings; more active involvement with committee chairs; and ways to improve communication with the Executive Committee members. As always, the ongoing demand via fax, e-mail, mail, and telephone continues to climb upwards. We are now averaging 1600 telephone calls per month. Our office has received more requests for mail lists for 1996, due in part to companies doing more direct mail campaigns.

Membership addendum: As we step into the new

year, we would like to show you some figures for last year. Our membership totals for last year as of July, 1995 were:

Regular:	2691
Students:	358
Retirees:	215

Our Subscriber totals for last year were 1281.
Our total number of new members last year was 462.
Our total loss of members from 1994 was 693.
Our total number of members this year is 2721.
Our total number of Subscribers this year is 1021.

Some of you have been interested in a formula that calculates the dollar worth of one member. This is a long and involved formula that has been designed by the experts. This formula is derived from total income and expenses from members. To apply this formula we would consider a promotion that we would like to offer. Then we would determine the total dollar amount in expenses and apply the income of the lifetime value of a member rather than applying a $65 value for one time. This will tell us more accurately the amount of profit/income that would be derived from this promotion.

The Society Office has been working diligently during the first quarter of 1996. some of the projects we have worked on are:

- We have placed membership advertisements in Applied Spectroscopy for January, February, and are currently working on a boiler plate advertisement for March and a promotional advertisement for April.
- We have put out the first issue of the "Light 'R' Side" to the local section officers for 1996. We had great participation for this issue including two meeting announcements and a local section article on restructuring the section volunteers.
- We have the Pittcon '96 promotion approved and prepared for the meeting in Chicago. We will be giving away SAS T-Shirts to those who join and a $20 discount to those who join as regular members.
- We have designed, received approval and will be mailing a verification of information card to all directory participants at the beginning of March.

Professional Classifications of the SAS:

Academic	572
Clinical laboratories	10
Commercial laboratories	139
Consulting firms	86
Government agencies	236
Industry	832
Instrument companies	279
Retirees	169
Students	209
Unknown	259
Other	37

For ease of grouping in statistics, we have combined some of the categories:

Academic	572	20.2
Industry	1197	42.3
Government	385	13.6
Students	209	7.4
Retirees	169	6.0
Unknown	259	9.2
Other	37	1.3

This might lead us to change the focus of our marketing to more of an industrial perspective. It has always been thought to have been more academic, but the numbers clearly show it is more industrial.

Jo Ann Brown
SAS Executive Administrator

Journal Editor's Report

Journal Focal Points for 1996 by issue:
February
*Focal Point: Near-Infrared Spectroscopy
May
*Focal Point: Vibrational Circular Dichroism
July
Focal Point: Ultrasensitive Analysis
September
Focal Point: ICP-MS
November
*Focal Point: NMR
(*denotes issues with special focus articles on Focal Point topic)

New initiatives associated with the journal:
Student biosketch. I intend on providing a few pages at the end of the technical papers listing a brief biosketch of student authors who are members of SAS. Polling of the Editorial Board on this concept was very positive. An example of what this may look like is shown below. The name for this section has not been decided... suggestions are welcome. Anticipated start date is January, 1997.
==========
John B. Smith
Education: BS(Chem) 1993 Colorado State University; Ph.D. (Chem) U. of Texas at Austin (est. 1997) "Thesis Title" (supervisor: Sally Risen)
Current research: John is involved in the design of a new mass spectrometer system for the detection of negative ions generated from an ICP with the intent of developing a technique for trace analysis of halogens and other electronegative elements with a high electron affinity. He

has recently achieved detection limits of 0.01 ppb of Cl in aqueous solutions.
Other research interests: John is also interested in the application of deconvolution techniques to improve mass spectral resolution of quadrupole mass filters.
E-mail: jsmit@main.edu
==========

Journal sponsorship of Student Poster Award at FACSS. At the request of Nancy Miller-lhli and Vahid Majidi, who will be organizing the SAS poster session at FACSS, the journal will allot $350 to support awards to student-presented posters during the special SAS poster session commemorating the 50th year of the journal.
SAS links for Applied Spectroscopy advertisers. SAS corporate sponsors and advertisers in the journal will receive a link to their home page or to a special page set up by Allen Press. This project was done in conjunction with Don Anderson (WWW Editor) and Ed MacMillan (Applied Spectroscopy's representative at Allen Marketing) and his colleagues at Allen Press. In brief, a selected topic of "Products and Services" will appear on the SAS home page. Upon selecting products and services, the viewer will move to a page set up by Allen Press where products and services will be listed in alpha ordered by company. Each company will have 35 lines of searchable text describing what they provide. In the final rendition there will be at least two levels of display: Companies who do not advertise in the journal or who are not corporate sponsors will have only their phone/fax numbers listed while companies who are advertisers or corporate sponsors will have a hot link to a home page designed and managed by Allen Marketing (in cooperation with the respective company) and the option of an additional link from this page to the company's home page. Allen Marketing will make all decisions regarding criteria for advertising support necessary to warrant a hot link. Likewise, they will be responsible for coordinating all activities and covering all costs associated with data entry and links to the respective companies. They will place on the initial page any companies that SAS provides to them.

Role of Electronic Media and the journal. I have set up an ad hoc Electronic Publication Committee consisting of Alex Scheeline (chair), Don Anderson, Jim deHaseth and Eric Salin to explore the general question of the role that electronic media should play in matters related to publications of SAS. They have been asked to provide some preliminary reports by the 1996 FACSS meeting.

James A. Holcombe
Editor-in-Chief, *Applied Spectroscopy*

Newsletter Editor's Report

At the time of preparation of this report, the first 1996 issue of the SAS Newsletter should be in press and hopefully available at the Pittsburgh Conference. That issue incorporates a number of changes in the format and contents including an 8.5" x 11" size, distribution as a supplement to the *Applied Spectroscopy* journal, and expansion of topics into areas such as the history of spectroscopy, profiles of well-known spectroscopists, as well as educational topics.

My ability to maintain the newsletter on the SAS WWW site has been temporarily interrupted during my tenure at Mount Saint Mary's College. I will be on-line again in early June and will update the site at that time. The newsletter is currently being prepared using Microsoft Publisher for Windows95 and there is no direct translation between that and HTML. However, a less graphic version of the newsletter will be posted when time permits.

The question has arisen regarding the possibility of advertising in the SAS newsletter. I have no strong objection to that concept, and it would- certainly help me meet the budget for the publication. I agree that we must be careful not to rob the Journal of advertising income and some scheme needs to be developed so that advertising in the newsletter is a extra bonus for those already advertising in the Journal. I would have no problem inserting camera-ready copy into the current newsletter format.

I am disappointed not to be able to attend the Pittsburgh Conference and associated SAS activities this year, but look forward to future interactions as well as suggestions for improvements in the newsletter format and your contributions to future issues.

Mike Epstein
Newsletter Editor

Local Section Affairs Committee Report

The committee has five main functions. The first one is "To study, and make recommendations concerning problems affecting local sections." It is probably the most important function of the committee but is also the least known one. the main goal of the committee for 1996 is to address it. The second goal is to involve more local sections in the process of nominating themselves for the William J. Poehlman Award and students for the Graduate Student Award. Looking at the results of the previous years only one or two sections participated. The

process of nomination must be made simpler.
1996 Plans (Q1,Q2)

February-March:
- Send introductory letter with questionnaire to address needs/concerns/suggestions to all officers of Local Sections.
- Send announcement letter for SAS Student Award and Poehlman Award to all Local Section Chairs. Include the form for nominations. The deadline for receipt of materials is April 1, 1996.

April-May
- Review submitted nominations. complete selection process by June 1, 1996.
- Summarize questionnaires received from Local Sections. Suggest some action items to resolve Local Section concerns if any.

June
- Notify SAS President and Secretary of the committee award selection results.

July
- Send information about award winners to the FACSS Program Committee for inclusion in the final FACSS meeting program.
- Send information about award winners to the editors of the Newsletter and the Journal for inclusion in their September Issue.
- Send congratulatory letters to both award winners.

Rina K. Dukor, Chair
SAS Local Section Affairs Committee

Publications Committee Report

The Publication committee was charged with two tasks for the upcoming year. The committee is currently examining the possibility of establishing a peer-reviewed methods/application newsletter. As a committee, we have not had a chance to explore various options because we had to finish the second year review of the Journal editors. Nonetheless, we are planning to complete this task within the next few months.

The committee's primary goal was to complete the second year review of the Journal editors. To accomplish this, the committee sent out an extensive survey to the members of the editorial board and the publication committee. The complete unedited version of this report is available at my office.

In short, the unanimous consensus was that both Jim Holcombe and Bruce Chase have done an outstanding job as editor-in-chief and editor of the Journal. They both should be highly praised for their hard work and significant accomplishments.

Vahid Majidi, Chair
Publications Committee

Internationalization and Regionalization Committee

The ad-hoc committee responded to questions presented to the committee from Nancy Miller-Ihli. The committee responses are summarized briefly below:

Internationalization: The committee was in favor of actively recruiting members outside of the US. Concerns were raised about exactly how this would be done, especially in those countries with existing spectroscopy societies. The committee felt that we have enough members/library subscriptions outside the US to help in this effort.

The committee opinion was in favor of a "one-price for all regular members" structure, but not funded by a hike in overall dues. It was the majority opinion that current SAS members would not support a $20-$25 increase in dues to subsidize out of US mailing costs. External sources of income were suggested to fund such a plan.

A wide variety of opinions as to what outside of US members would be interested in as benefits was put forth. The best suggestion is probably to survey our current outside of US members on what they want, and use that as a basis for planning a marketing strategy.

Committee opinion generally agreed that increased outside of US membership should not be at the cost of a lowering of benefits to current members.

Regionalization: The committee felt that the idea of regional governance was important, especially to accommodate large numbers of outside of US members and to operation of the Governing Board (maybe ease of meeting quorum), but were equally vocal about the problems to be faced with active local sections, communication from members to regional delegates and other important issues in both the "why" and "how" categories. The majority favored consideration of the idea, while pointing out implementation issues that will need to be addressed.

The majority of the committee agreed that regions are an approach to incorporating outside of US members, but the real question of whether representatives from far reaches of the globe will attend the Governing Board meetings was raised. the answers to the question related to number of regions and delegates in the prelim-

inary proposal from Miller-Ihli were equally split between yes (or maybe) and no. the biggest concerns from the no voters were the lack of recognition for current large active local sections and the lack of proportional representation. The question of whether proportion representation is a desired end needs to be addressed. An alternate plan was proposed by Griffiths.

The majority of the committee were not in favor of separating out local section dues and/or making them optional.

Eileen Skelly Frame, Chair
Internationalization and Regionalization Committee

Museum Committee Report

The Museum Committee of the SAS in conjunction with the Chemical Instrumentation Museum Group (CIMG) of the Chemical Heritage Foundation has been developing plans for raising seed funds and at the same time carrying them out. Contacts have been made and will continue to be made over the coming months with instrument companies and their leaders along with key organizations to secure funds for the endowment of the museum. This effort is vitally important in order for the museum to become a reality.

At the meeting of the CIMG that was last held in conjunction with the EAS in November, a policy on collection of instruments was begun. At that meeting Roy Koirtyohann volunteered to put together a list of all possible kinds of instruments for including in the museum. So, if anyone has their ideas of any particular instruments that should be included, please contact him. He can be reached at 573-687-3047 or by FAX at 573-882-2754.

Publicity of the museum effort is making strides from the American Laboratory article of June 1995 to the Guest Editorial in Applied Spectroscopy in September 1995 to an article in the Pittsburgh Today for use at the 1996 Pittsburgh Conference. In addition, the spring publication of the Chemical Heritage Foundation's Chemical Heritage Newsletter contains an article on the Museum's plans. other articles are either just appearing or will be appearing in Analytical Chemistry and Clinical Chemistry News. These articles are putting the museum on the map. Besides the various articles CIMG has a booth at this years Pittcon exhibit to promote the museum and its plans as well as to receive feedback. Come and see us at BOOTH #3023.

Finally, the site for the museum is currently undergoing renovations. It was purchased last July 30th and the staff of the Chemical Heritage Foundation moved into the partially renovated building at 315 Chestnut Street in Philadelphia, PA during January. Renovations in the building will continue for the next several years. However, plans are underway to move the instruments that are currently being stored in Delaware following the Antiquities Display at the 1994 Pittcon in Chicago to the new site in Philadelphia. These include six different instruments with two of them being classic emission spectrometers.

We need the support of all fellow members of the SAS to make the Instrumentation Museum a reality.

E. G. Brame, Jr., Chair
CIMB and Museum Committee

Nomination of John Johnson for Emeritus Membership

The New York Section of SAS, in a letter from Marvin Margoshes, section secretary, dated December 28, 1995, nominated John Johnson for the status of Emeritus Member of the SAS for his quiet and unfailing service to the New York Section and the National Society, and particularly for his activities in promoting membership in SAS at the Eastern Analytical Symposium.

Report of the SAS Delegate to FACSS

Both SAS delegates (Vahid Majidi and Davis Trimble) were present at the March 8, 1996 FACSS Governing Board meeting. The following items, relevant to SAS, were discussed during the meeting.

Carnahan provided a report on the Cincinnati meeting which stated that the meeting finished $15K in the black. Treasurer (Brewster) reported that the FACSS bank account holds approximately $25K. Later, Majidi motioned for consideration of a funds distribution from the '96 meeting as per the bylaws. Scheeline moved to table the motion, which was approved unanimously.

Long range planning (LRP) committee provided a report which announced that the '97 FACSS meeting will have to be moved to Providence, Rhode Island due to an overlap with the CSI conference. IRP recommended siting FACSS 2001 in Detroit. Location in 2000 was not addressed because of difficulties in '97.

Bourassa expressed concern over requirements that might constrain FACSS to a rotation through specific sites. He motioned that FACSS not be constrained to a fixed rotation schedule which was seconded by Galle.

The motion carried unanimously.

Barber (Nominations Committee) reported that the '98 GB chair nominee was John Graham and the General Chair for '98 was David Laude. Barbour reported that Chris Brown had expressed interest in being Program Chair for '97. The voting results were: Chris Brown approved unanimously pending his acceptance; Graham - 8 in favor with 4 abstentions; Laude - 11 in favor with 1 abstention.

Barbour reported that the FACSS contract was negotiated for two years and is up for renewal at the end of October this year (1996). Changes such as the use of Conferon and the closing of the Manhattan office need to be factored into the new contract. A second related problem is that there now exists no clear distinction between FACSS and SAS. A committee will be set up to gather the facts and report in the fall. Miller-Ihli reported that SAS will have an audit of their national office. One area which will be examined is the time spent by personnel in executing the FACSS contract.

Scheeline moved that the ad hoc committee be empowered to employ a consultant at a fair fee to advise FACSS on how we can interact with the national office. Stetter suggested that we choose a different contractor to avoid a conflict of interest. Scheeline indicated that SAS's consultant had substantial expertise in evaluating various chemical entities and could provide useful information. The motion was approved unanimously.

The meeting adjourned by 7:31 p.m.

Vahid Majidi
SAS Delegate to FACSS

Can you identify this loca-

Hint: No, it's not the site of the next SAS Executive Committee Meeting ...

Retrospectives:

The First SAS National Meeting - June 1962

In 1962 the Baltimore-Washington Section was host to an International Conference on Spectroscopy. The Tenth Colloquium Spectroscopicum Internationale was also designated the First National Meeting of the Society for Applied Spectroscopy. The surplus funds from this meeting were donated to establish a fund for use by other Sections of the Society sponsoring national meetings in succeeding year. National meetings have been held annually since that time.

The meeting program reads like a Who's Who of spectroscopy and SAS, both young and old. The Advisory Board included W.R. Brode, H. Kaiser, W.F. Meggers, A.C. Menzies, and A. Walsh. The Organizing Committee consisted of Bourdon Scribner (general chairman), Marvin Margoshes (secretary), Alvin Bober (treasurer), Ellis Lippincott (program committee chair), Andy Rekus (finance chair), Robert Michaelis (recreation), Harry Rose (arrangements chair), Leo May (grants-in-aid), Ed Garlock (social events) and many more. Among the many well-known speakers were C. Th. J. Alkemade, Velmer Fassel, Fred Brech, L. S. Birks, K. Fuwa, B. L. Vallee. There are too many luminaries to mention here. The program and abstracts were published in Applied Spectroscopy (Vol 16, 1962, p. 44).

The Organizing Committee at work (photo by Carl Leistner)

The conference was held on the campus of the University of Maryland in College Park. With a registration fee of $15 that included the General Reception and an old-fashioned Maryland chicken barbecue, this was quite a bargain. Other events included a cruise down the Potomac River to Mount Vernon, a U.S. Marine Band concert, and a golf tournament, the latter organized by Bob

Michaelis, of course.

The conference was a smashing success, both scientifically and socially, and **thanks to Carl Leistner**, who contributed a large number of photographs of the early years of SAS to the National Office, we are able to return to those days of yesteryear:

Phil and Andy Rekus dance aboard the cruise ship.

Sir Alan Walsh (center) and colleagues enjoying the cruise.

Velmer Fassel, Ellis Lippincott, Mrs. Lippincott, and Bourdon Scribner (left to right).

Spectroscopist Profile from page 9

true railroad aficionado, Bourdon also maintains an interest in model railroading, having built in his basement an HO-scale model of the Washington D.C. railway system in the days of the steam train.

Bourdon retired from NBS in 1973 as Deputy Chief of the Analytical Chemistry Division. Perhaps Bourdon's greatest honor occurred in 1972, when the Committee E-2 on Emission Spectroscopy of the American Society for Testing Materials established the B.F. Scribner Award for standards service in emission spectroscopy. The tenth recipient of that award was Bourdon Scribner. As noted by the ASTM Board Chairman, Bourdon's 46 years of service and dedication definitely illustrated his worthiness of having this award named after him and receiving it as well.

The authors have drawn on a number of sources for this article, not the least of which was "Remembering Early Days at NBS, 1923-1949" by B.F. Scribner. Others included "Sea-Going Spectroscopist", by Roger G. Bates, Capital Chemist, October 1956; "CSTL History: Bourdon F. Scribner" by Doug Olson, CSTL Update, Autumn 1994; and "Measures for Progress: A History of the NBS", R.C. Cochrane, Arno Press, 1976. Special thanks to Charles Beck, analytical chemist and unofficial chemical historian of NIST, and especially to Bourdon Scribner for his generous cooperation with the authors in preparing this manuscript.

Finally, Bourdon Scribner asked that we express his special gratitude to all his colleagues, both at NBS and in ASTM committee E-2, for their hard work and friendship throughout his career.

Marvin Margoshes and Al DeLeonardi take a break.

History of Spectroscopy: the Allison Effect

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(later Auburn University) is similarly credited in the 1994 and 1996 editions of Microsoft Encarta.

The so-called Allison Effect was one of the instances of pathological science discussed by Irving Langmuir in his 1953 lecture that was reprinted in PHYSICS TODAY, Oct 1989, P. 36. Why did Allison make the assumptions that led him to the claims that he made?

As spectroscopists, perhaps we can judge Allison far less harshly than Langmuir. Let's examine his apparatus in detail. Look at the instrument diagram. This scheme might have worked if the radiation from the spark light source was temporally very short (ns) and very stable. Unfortunately, a single light pulse from a spark (which is repeated rapidly as the capacitor charges and discharges) is on the order of microseconds, but this was not general knowledge at the time. Anyway, the idea was to take the light pulse from the spark and pass it through a polarizing prism (see Nicol prism column in chart). The light pulse then passes through two cells that are wrapped with wire. The wire goes to the spark circuit so (theoretically) when the capacitor discharges across the spark gap, current flows through the coils and a magnetic field is applied to the cells. With certain liquids in the cell, the plane of polarization of the light passing through them is rotated. Now the coil around the second cell is wound completely opposite to the first cell. Therefore, if the same liquid is in each cell, and the magnetic field is applied to each cell at the same time, the second cell will reverse the Faraday effect on the first cell, thus restoring the direction of polarization defined by the first polarizer. A final polarizer (Nicol prism) is placed after the second cell and oriented 90 degrees out of phase of the first polarizer. Thus, no light should pass through the system. Now, say we have two different liquids in the cells and there is a delay between the application of the magnetic field to the cell and the appearance of the Faraday effect, and this delay depends on the identity of the liquid. This is what Allison was claiming. If the light pulse passes through the first cell (containing liquid A) and its polarization is changed, it will pass through the second cell (containing liquid B with a longer delay in the Faraday effect) before the Faraday effect in that cell can restore the direction of polarization defined by the first polarizer. Therefore, light will pass the system. Now, all we have to do is shorten the length of the wire to the second cell (a distance corresponding to the time delay of the Faraday effect in the second liquid) until we see a minimum in the light throughput of the system (i.e., the Faraday effects of both liquids overlap) and we have defined the time delay, which is characteristic of the liquid B.

Unfortunately for Allison, (a) the true temporal length of the spark meant that he was looking for a minimum that corresponded to a decrease of perhaps one part per hundred to one part per thousand in the light level, and (b) he was trying to do this in a spark whose intensity varied perhaps 10% to 20% for each pulse. This was further complicated by the fact that the spark pulse is not a uniform pulse, but oscillates considerably in intensity within each pulse.

He started this work with J. Beams at the University of Virginia and Beams himself continued his work with this effect and sparks but then went on to other things. It is not clear whether he ever discovered his mistake, but he certainly never pushed the technique. On the other hand, Allison began to make grandiose claims that compounds when dissolved gave delay minima corresponding to the compounds (NOT the ions!) and that the effect was the same down to 10^{-8} M and then disappeared. By the early 1930's, the ACS eventually refused to accept any more papers on Magneto-optic Spectroscopy, but not before a good deal of debunking took place and Allison claimed to pass *blind* tests of his methodology.

What is most telling is that the "hero" of last issue's ***History of Spectroscopy***, Robert Wood, who debunked N-Rays, was taken in by the Allison Effect. It is referenced in a very straightforward manner in his book, *Physical Optics*! Why was Wood fooled? Perhaps because at the state-of-the-art in knowledge of spark spectroscopy in the 1920s, Allison's technique might have worked. It was Allison's dogmatic refusal to accept that he made a mistake that made this episode truly pathological.

Of course, as I noted earlier in this article, it looks like we are still being fooled by the Allison Effect ... at least Columbia University Press and Funk & Wagnalls are...

continued on page 22

History of Spectroscopy: the Allison Effect
continued from page 21

Editor's notes: *I'd welcome further comments on my interpretation of this piece of spectroscopic history, particularly since I am not particularly knowledgeable in spark emission spectroscopy. Your comments will be published in a subsequent issue.*

Special thanks are due to Walter Rowe, Professor of Forensic Science at George Washington University, who introduced me to the work of Fred Allison and provided many helpful references, and Alex Scheeline, Professor of Chemistry at the University of Illinois-Urbana, who helped to reduce my ignorance of spark emission spectroscopy.

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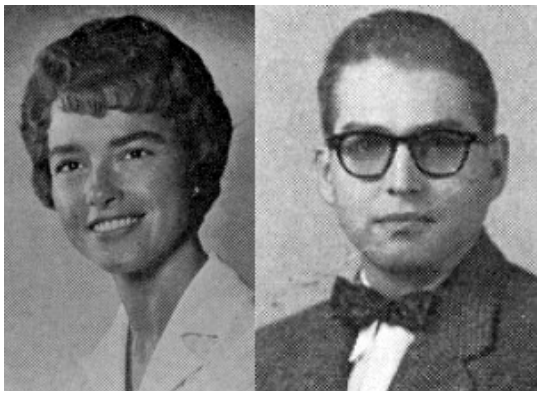

Identify the two former (or current) SAS officers shown in the above photograph. Send your entry to the SAS National Office at 201B Broadway Street, Frederick, MD 21701-6501. The winner will be selected by random drawing from all the correct answers on Oct 31. Your entry should include your name, postal address, and T-Shirt size requested.

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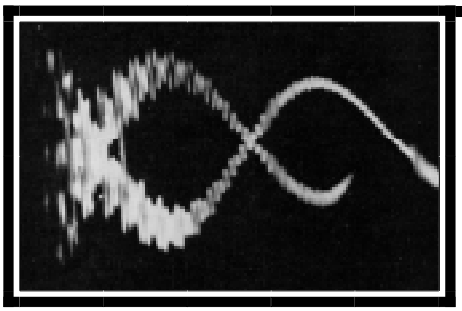
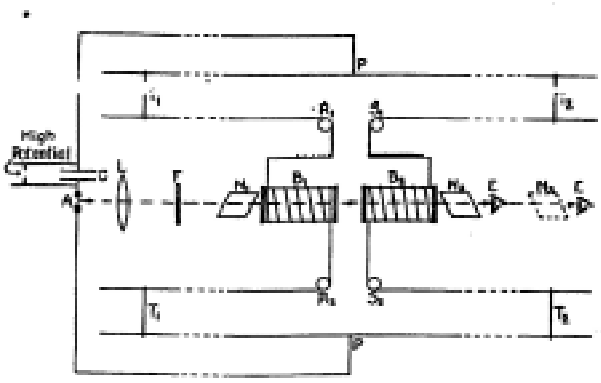


The Allison Effect: The Magneto-Optic Method of Spectrochemical Analysis

by Mike Epstein

During the first 40 years of the 20th century, scientists were eagerly trying to find real evidence for the existence of elements 85 and 87, which had been predicted by Mendeleyev in the late 19th century. It was during this time that Fred Allison, an American physicist, devised an analytical method that he called the **magneto-optic method of chemical analysis.**

The method was based on the comparison of the difference in response of the Faraday effect induced in different liquids (Allison, F. (1927). The effect of wavelength on the differences in the lags of the faraday effect behind the magnetic field for various liquids. *Physical Review,* **30,** 66-70). The Faraday effect involves the rotation of polarized light passing through a liquid, and induced by a magnetic field applied to the liquid. He constructed an apparatus in which light from a high-voltage spark was directed through crossed polarizers and two tubes containing the liquids to be analyzed, and surrounded by coils of opposite winding. The time at which the magnetic field was applied to the different liquids could be varied by adjusting the distance the electric current had to travel to reach the cells. The observer looked for a minimum in the light from the spark, which indicated the delay in the appearance of the Faraday effect (relative to the reference liquid) after the magnetic field had been applied.



Allison first applied this procedure to simple solutions of carbon bisulfide and hydrochloric acid and later to mixtures. He became convinced that compounds would retain their individual maxima in a mixture, regardless of the other components. He claimed a sensitivity down to less than part-per-billion levels, and he began to use his method to search for the elusive elements 85 and 87. He rapidly found them and published studies on spectra and compounds of virginium and alabamine. His results were replicated in part by several other laboratories, but detailed examination by others (MacPherson, H. G. (1934). An investigation of the Magneto-Optic Method of Chemical Analysis. *Physical Review*, **47,** 310-315) proved conclusively that the maxima observed by Allison and others "had no objective reality" and "were not a function of the chemical solutions used."

The Allison magneto-optic method disappeared from the pages of scientific journals. In retrospect, the modern analytical spectroscopist can easily find errors in Allison's reasoning. He never offered a substantial theory to explain his observations, but more importantly, he ignored several experimental factors that limited his approach from the start. This was a classic example of the investigator finding what he believed in. But it certainly didn't hurt his career, since his biography lists him as head of the Auburn physics department and dean of the graduate school in 1953, with the physics building at Auburn named in his honor. Furthermore, he is still listed as the discover of astatine (i.e., element 85, alabamine) in the 1991 Concise Columbia Encyclopedia and the work at Alabama Polytechnic

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