



Cryo-SEM of Cheddar Cheese  
Courtesy John Shields and Ashraf Hassan, Univ. of Georgia and South Dakota State Univ.

Dear SEMS Members,  
2004 marks the 40<sup>th</sup> anniversary of the founding of SEMS. Unfortunately this falls in a year when we will not have an annual meeting. However we will not let this milestone go unnoticed. We intend to make a minor splash in Savannah during the MSA/MAS meeting. We have chosen three 40<sup>th</sup> Anniversary distinguished lecturers, all of whom will be making major presentations at that meeting. They were chosen on the basis of their valuable service to SEMS, their scientific accomplishments and their active participation in MSA. The three are **Charles Mims, Jay Jerome and Sara Miller**. All three chose to forgo any monetary prize and suggested that travel awards be made to students instead. Therefore we will present 3 travel awards, in their names, to students making presentations in Savannah. Sara Miller has also generously made a contribution to the travel fund so that we might be able to offer a larger award.

We will have a local affiliates booth in Savannah that will be coordinated by **Bill Monroe**. If you can spare time during the meeting, I am sure he will appreciate any help you can give him. **Sara Miller** is the local arrangements chair and is still seeking volunteers to help with various duties at the meeting. We will also have our annual business meeting during breakfast on Thursday.

The “Remember When” series, that is being organized for the Beam by **Jay Jerome**, is a most appropriate observance of our anniversary. I urge any and all of you with reminiscences that you want to share to send them to Jay. I just have a problem remembering anything earlier than yesterday, and it was not all that interesting.

I am not exactly sure when **John Shields** will assume the presidency, since the crown usually changes heads in May at our annual meeting. So I expect that he will assume the office sometime around then. I urge all of the members to give him the support that he deserves and keep the electrons and photons flying all round the South East.

*Greg Erdos*

**Congratulations to our new officers!**

**President-elect: Judy King**

**Member-at-Large: Mike Miller**

**Treasurer: Karen Kelley**

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Society.

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**New SEMS Officers for 2004-2005**



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Judy King



Member-at-Large

Mike Miller



Treasurer

Karen Kelley

**In Memorium**



**Buddy Steffens** died Thursday, April 22 from complications related to his ongoing battle with cancer. He is survived by his wife Susan and a daughter, Rachel. We will miss him.

## FROM THE EDITOR

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Trouble? Yes, when your computer's hard drive needs to be reformatted and you think you've got all the files backed up. That's when the carpenter's adage - "measure twice, cut once..." could be applied to your important files. How would that go - "copy twice, reformat once."? Unfortunately all but the Beam's files were backed up and I ended up begging for information, digital ads and pictures all over again. And I had just become so comfortable and settled with getting the Beam out to everyone.

My only saving grace was that I had mailed the digital version of issue 19-2 to our webmaster, Pat Brown, and he graciously bounced it back my way. Unfortunately, it was the low-res web version. I guess something is better than nothing. If I'm lucky, someone will become disgusted and offer to replace me as Newsletter Editor (hint, hint).

On a more high-quality note - **Bill Monroe** and **Jim Sheetz** are already in the throes of producing a memorable and successful meeting for 2005 in **Pensacola, Florida**. This future meeting will be great and double as Microscopist Spring Break (no wet t-shirt contests though, I'm sure I'd have to vote for Charles Mims). Make sure we don't lose our momentum after the M&M Savannah meeting. Everyone should make a determined effort to attend, participate and provide Bill and Jim with ideas, assistance, papers, talks, workshops, hula dancers and other entertaining possibilities.

See you in Savannah!  
John

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## Historical Perspective Edited by Jay Jerome

This is a continuing column in the BEAM dedicated to reflection on our history and accomplishments. I thank **Charles Mims** for allowing me to pass-on a few more of his fond memories in this issue. I have also included a wonderful piece by **Raymond Hart**. I hope every SEMS member (young and old) will consider contributing to this feature highlighting our History. I see this as a space to share our history, get to know each other better, and record the personal side of science. The submission does not have to be long, just interesting. Send submissions to me at [jay.jerome@vanderbilt.edu](mailto:jay.jerome@vanderbilt.edu).

### Charles Mims

I attended my first SEMS meeting in 1987 in Savannah after moving to UGA in the Fall of 1986. I had been quite active in the Texas Society of Electron Microscopy and had left some very good friends behind. I was looking to find a similar regional society to participate in and quickly felt at ease in SEMS. The people I met at the meeting welcomed me as a member and made me feel right at home. Over the years I've become good friends with many SEMS members and have always looked forward to seeing them at the annual meetings. In my opinion SEMS meetings provide an excellent mixture of science and social activities.



I've never really had a bad experience at a SEMS meeting. One of my favorite meetings was the 2000 meeting with the Alabama Society in Gulf Shores, AL. The meeting site right on the beach was outstanding ... everyone from the vendors to the student members, to the old-timers seemed to be really relaxed. We also had good turn out coupled with an excellent scientific program. I also particularly enjoyed the most recent 2002 meeting here in Athens. The excellent turn out reminded me of some earlier SEMS meetings and I sensed a level of enthusiasm and excitement that has been missing from some of our recent meetings. I hope we can carry this into the 2005 meeting.

One of my funniest memories is from the 1993 meeting in Birmingham. The banquet was held in a beautiful setting at the state botanical garden. Sandy Silvers was M. C. for the banquet and opened by saying how happy she was to be in Alabama .... turns out that she is a big Univ of Alabama football fan with fond memories of the legendary Bear Bryant. While she was talking about her love for UA and the Bear I noticed that table cloths and napkins were red and black. When she finished her testimonial I couldn't help but thank her for using UGA's colors at the banquet!

I've always enjoyed getting to bring my students to SEMS meetings. For many of them it was their first scientific meeting. A number also gave their first scientific talks at SEMS meetings, usually as Ruska participants. For me, the Ruska Award is one of the best things SEMS does. On a sad note, I really miss not getting to hear Ivan Roth give the history of the Ruska Award at the annual banquet!



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Gardens

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## Raymond K. Hart

SEEMS President, 1985 - 1986

Distinguished Scientist, 1993

One of my first acts after arriving in Atlanta from Chicago on January 1, 1970, was to join the Southeast Electron Microscopy Society (SEEMS). I considered joining SEEMS a natural thing to do, since I had been an active member and officer of both EMSA and MSEM since coming to the USA in 1958: SEEMS became an EMSA Affiliate Society in 1980. I needed little prompting to join SEEMS, since I had a number of associates and friends who had gravitated to the Southeast from various parts of the country. Names that come to mind were Harlan Troth, Harvey Merrill, Theodore (Ted) Willmarth, Jack Horner, Derek Dove, Walter Humphreys, as well as Claude Arceneaux from Baton Rouge, who at that time (1970) was spending a good deal of time in John Brown's laboratory at Georgia Tech.

From the early 1960's to the mid 1970's was a very interesting time to have been actively working with electron microscopes, as well as light microscopes and electron microprobe instruments. By 1968 major progress had been made in transmission electron microscopy instrumentation, and scanning electron microscope instruments were just beginning to appear on the horizon. Nationwide, professional societies were also maturing, defining their "reason to be", and in many cases scientists, including myself, were changing their focus on how they should spend their time and use their knowledge to the betterment of their professions.

The origins of SEEMS was the topic of an article written by Ivan Roth, and which appeared in SEEMS 1975. An organizational meeting was convened at Emory University on May 22, 1964, by Anthony Kattine (Emory) and who was elected Chairman. John Brown (Georgia Tech) was elected Secretary/Treasurer. I have no record of the number of attendees at the May 22, 1964 meeting, or of the financial situation that SEEMS was in at its inception. However, I do have a record that in January 1970, when I joined the Society, the Directory listed 179 members and prospective members. Active membership grew to 280 in 1972 and 468 in 1976.



Membership dues in 1970 were \$3.00 per year and \$20.00 for Corporate Members, so you can see that the Society was not very affluent. In fact, Gene Michaels, who was Secretary/Treasurer from 1972 to 1976, reported that when he took office, the balance on hand in October 1972 was \$443.04, and when he left office in 1976 the balance was \$2785.86. From that time onwards, SEEMS has continued to grow fiducially, in its membership as well as in stature in the scientific community.

Over the years SEEMS, and now SEMS, has hosted many excellent meetings as well as one which nearly bankrupted the Society. In the early 1970's the Constitution and by-laws required two meetings a year to be held. However, that schedule posed too great a burden on the membership, especially since the country was heading towards the worse recession in many years and funding for the "hard sciences" was being drastically cut by all supporting agencies. Thus, in 1974 the by-laws were changed so that only one meeting a year was to be held, and the venue was to alternate between Atlanta (which included Athens !) and other cities in the Southeast which had good supporting membership, such as Gainesville (FL) , Charleston (SC), Columbia (SC), Augusta (GA) , Raleigh (NC) and Charlotte (NC). With the very able assistance from Betty and Charles Sutlive, who were the only members living in Savannah at the time I arranged a SEEMS meeting in Savannah in May, 1987. It turned out to be both a successful and enjoyable meeting. We even had people from NIH giving papers. MSA is trying the same thing for their Savannah - 2004 meeting.

The first SEEMS meeting that I attended was at the Center for Disease Control, Atlanta, on December 4/5, 1970. A very fine program was put together by the CDC Program Committee and coordinated

by Carey Callaway. At that time the guest speaker was Bob Heidenreich from Bell Telephone Labs, Murray Hill, NJ, and some of you may remember that he was the author of “Fundamentals of Transmission Electron Microscopy”, published in 1964. Another highlight of the CDC meeting was a dinner show at “Wits End”, in the recently opened Underground Atlanta.

After the snowed-out meeting that should have taken place in February 1971, the venue for the next meeting was moved to sunny Florida, and held at the university of Florida in Gainesville on May 5/6. 1972. That meeting was warm, friendly and stimulating.

The year 1974 was notable for several reasons. The winter council meeting of EMSA was held at the Menger Hotel, which is across from the Alamo in San Antonio, Texas. Robert Turner, then President of the Texas Society for Electron Microscopy (TSEM), invited not only the EMSA Council, but also SEEMS, which was hosting the EMSA-1974 meeting in Atlanta and the Louisiana Electron Microscopy Society. A spirited time was had by all persons in attendance. The one thing about that meeting which sticks in my mind, however, was the most abominable food the Menger Hotel served.



Another interesting meeting, and not only for its scientific content, which took place in 1975 was the joint EMSA/MAS meeting at the Fontainebleau Hotel, Miami Beach. The reason it was so interesting was that Ed Delameter, who had been appointed the SEEMS Local Arrangements Chairman, resigned at the January 1975 Executive Council Meeting for personal reasons. I having had some previous experience in running a national meeting (25th Anniversary meeting of EMSA in Chicago - 1967) took on the task of running the Miami Beach meeting from Atlanta. After many trials and tribulations, we held a successful meeting, and many thanks were due to staff at the University of Miami Medical College.

Another important milestone in the life of SEEMS was the founding of the RUSKA AWARD, which was first presented in 1972. The award honors the Nobel Laureate Ernest Ruska and his brother Helmut Ruska. An advanced design of the Knoll and Ruska’s 1932 magnetic lens instrument was completed by von Borries and Ruska in 1938, and it was commercially available from Siemens and Halske in 1939. The 1938 instrument had a 100 angstrom resolution at x20,000 magnification. Helmut Ruska was among the first scientists to examine biological material in an electron microscope. Several years after the Ruska Award’s first presentation, and for which there were few applicants, it was decided by council to appoint a committee (Sara Miller - Chair, Ken Muse and Ray hart) to establish new guidelines and an evaluation protocol. The evolved regulations and guidelines were accepted and published in the SEEMS Newsletter, December 1977.



446.2. Arbeitsgruppe Dr. Knoll im Keller der Versuchsanstalt Heisenberg, Berlin (Mit 1932) Richard von Borries (links) und Helmut Ruska (rechts). (Hilfsmittel, Helmut Ruska, Max Knoll, Helmut Ruska, Helmut von Borries, Gustav Adolf Kluge)

through the assiduous application of electron microscopy. We have also had distinguished scientists as banquet speakers to talk on the lighter side of scientific endeavor. I well remember two of those talks which just happened to be back to back. Thinking about that, I wonder if the timing was not by design. The first was a talk by Philip S. Callahan at the 1972 Gainesville, FL, meeting entitled “Plants, Insects and People”. The following year Gene Michaels (I believe) arranged for Murray Blum of UGA to give a talk on somewhat of

the same topic, entitled “Smells, Senses and Sex”. Maybe, those two great institutions do have something in common besides football. In any case, both talks were hilarious, and as Gene Michaels remarked, it is hard to laugh that hard on a full stomach.

Over the years we have had our own Johnny Carson, our poet, Edith Me Rae who wrote “I could have scanned all night” (see next page) and sung as a “Barbershoperetta” by John Munnell and Ivan Roth. In fact, at all the early meetings that were held in Athens, John Munnell and Ivan Roth entertained us together with other members of the Athens Chapter of the Barbershop Singing Group (SPEBSQSA). Both those members are now deceased. We dearly miss them, But I have a strong feeling that they will always be remembered as a vital and inspirational pair of SEMS.

Now, let the band play on.

### I Could Have Scanned All Nite

I could have scanned all Night  
I could have scanned all Night,  
and still have looked for more.  
Yes there were Leukocytes  
and there were phagocytes and  
sights I must explore.  
I'll never know  
what made it so exciting,  
When all at once the scan was right,  
I only know ten K-V had made a beam for me  
I could have scanned scanned scanned  
All Night

I could have scanned all Night  
I could have scanned all Night,  
and still had more to see.  
There were some Cilia  
and Microvillia so vivid in 3-D  
I'll never know  
what made it so exciting,  
When all at once the focus was right,  
I only know ten K-V had made a beam for me  
I could have scanned scanned scanned  
All Nite, All Nite

Words by: Edith McRae, 1979

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## ASTIGMATISMS

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After a successful bout of article begging, **Bill Monroe** of Mississippi State Univ. sent in these gems. - John

### Forceps Bluff

I bet that every EM tech has a “favorite pair of forceps”. In fact, I know a faculty member who has used the same “lucky” forceps since the 60’s and will allow no one to even touch them. I, myself, have one such pair that has served me well for 19 years. To prevent them from being “borrowed” or “relocated” to other labs on campus, I thought up a simple anti-theft strategy. I attached on one side of the handle yellow RADIOACTIVE worded tape and on the other side POISON worded tape with the skull and cross bones symbol.

The “labeling” has been effective. In fact, even when I have offered my “lucky pair” for a student to use briefly with me at their side, after looking at them, they decline.



Bomb Squad Pranks

### MSU Student Ran Over By Own Car (Title appeared in the MSU student newspaper) (TRUE STORY)

I’ve never met an EM student I did not like or enjoy working with. However, a few have demonstrated high academic capability, but possessed a minimum of manual dexterity or skills in use of EM equipment and other instruments in their field of study. “T.C.” was one such student. She was an international student, academically proficient in written tests and classwork, however was “technically challenged” with regards to equipment. She was the ONLY student I ever knew who would lose TEM grids in the scope. We had to break the column to find and remove grids, *on three separate occasions*. Trimming blocks with razor blades also posed a challenge and a large supply of band aids were kept on hand for weekly razor blade lacerations incurred by the young student. Alas, after 4 (long) years and numerous occasions of “*bad luck*” with equipment, and nearing the completion of a PhD, a bizarre accident took place. T.C. parked her car on campus on an incline and left to check mail at the campus post office. Upon hearing loud shouts of “watch out for the car” she looked back and saw her car rolling down hill towards other parked cars and pedestrians. She made an effort to run down the car, jump in and apply the brakes. That was a mistake!!! With one foot in the car, T.C. tripped and was pulled underneath, thus stopping the car...with her chest, leg and pelvic bone. After a long and thankfully complete convalescence, T.C. finished the PhD program, and decided that an academic career was just not what she really wanted to do in life after all her efforts in academia. She returned home to her native country and went into the family jewelry business.

## Application for Travel Support for Technologists

Each year the SEMS Executive Council considers applications for travel awards to support meeting attendance by Technologists. Awards are made on a competitive basis from limited funds designated by the society for this purpose. **Submitting this application does not guarantee that an award will be made. There is a limit of \$400 for travel awards.**

### A. Please Print or Type:

Name: \_\_\_\_\_

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Company or Institution: \_\_\_\_\_

Mailing address: \_\_\_\_\_

City, State, Zip: \_\_\_\_\_

Phone: \_\_\_\_\_

E-mail: \_\_\_\_\_

SEMS member for \_\_\_\_\_ Years

Name of immediate supervisor: \_\_\_\_\_

Supervisor's Phone: \_\_\_\_\_

Supervisor e-mail: \_\_\_\_\_

Signature of Supervisor \_\_\_\_\_  
(indicating support for your attendance)

### B. Dollar amount of local funds available for you to attend M&M 2004:

Minimum amount requested from SEMS to attend Meeting: (fill all that apply)

<b>Hotel</b>	_____
<b>Registration</b> (available only to those presenting)	_____
<b>Automobile travel</b> (calculate \$0.30/mile)	_____
<b>Air Travel</b> (awards for air fare will receive second priority, may not be sufficient to cover entire fare, and are subject to final confirmation of cost)	_____
<b>Total:</b>	_____

It is assumed that if this minimum cannot be met, you will be unable to attend the meetings. More funds than your requested minimum may be allocated after consultation with you, the Executive Council, and other applicants.

\*Please use a separate sheet to briefly comment on how participation in SEMS might benefit you and enhance your present position.

Applications must be received by **June 1, 2004**. Mail to:

**Dr. Greg Erdos**  
**PO Box 118525**  
**Univ. of Florida**  
**Gainesville, FL 32611**

**Student Travel Awards to M&M 2004  
Savannah, GA**

In honor of SEMS 40th anniversary, three student travel awards will be presented in the names of our three 40th Anniversary Distinguished Lecturers. Each of the awards will be presented in the amount of \$450. Awards will be made based on the quality of the paper presented.

**To qualify for the award:**

1. The student must be the primary author of an abstract for meeting presentation. The student must personally make the presentation (either platform or poster) and be present throughout the meeting.
2. The student must have been enrolled at a recognized college or university during the 2003-2004 academic year.
3. Each applicant must be sponsored and validated by a signed statement from a non-student member of SEMS verifying student qualifications (see form below).
4. A digital copy of the abstract must be submitted to the award chair at the address below by e-mail or on a recordable media by standard mail.
5. The revised deadline is **June 1, 2004**.

---

<b>Name:</b> _____	<b>Title of Presentation:</b> _____
<b>Institution:</b> _____	_____
<b>Address:</b> _____	_____
_____	_____
<b>Phone:</b> _____	_____
<b>E-mail:</b> _____	

SEMS Member Sponsor:

“I verify that the above listed applicant is a registered undergraduate/graduate student during the 2003-2004 academic year.”

Signed/Dated: \_\_\_\_\_

Print or type Name: \_\_\_\_\_

(A current non-member may sponsor a student by submitting a membership application and fee together with this award application)

**Submit application to:**

Dr. Greg Erdos	
PO Box 118525	gwe@ufl.edu
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Signature of Advisor (for student applicants): \_\_\_\_\_

Signature of Applicant: \_\_\_\_\_

Enclose a check (US funds, drawn on a US bank), for one year's dues, payable to MSA, or complete the credit card information below. Also, inclose a brief statement of your qualifications, experience, and/or student status.

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## SOUTHEASTERN MICROSCOPY SOCIETY MEMBERSHIP APPLICATION

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The purpose of SEMS is to increase and spread knowledge of microscopy. Most members share an interest in the biological and physical sciences, applications of light microscopy, and transmission and scanning electron microscopy, and microscopical analysis. The annual meeting presents invited speakers, contributed papers and posters, as well as commercial exhibits of light and electron microscopes and related equipment and supplies.

Annual dues for regular members are **\$10**, students (with signature of faculty advisor) **\$5** and corporate members **\$50** for the calendar year.

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Name: \_\_\_\_\_

Company or Institution: \_\_\_\_\_

Mailing address: \_\_\_\_\_

City, State, zip: \_\_\_\_\_

Telephone: \_\_\_\_\_ E-mail: \_\_\_\_\_

Fax: \_\_\_\_\_ URL: \_\_\_\_\_

Membership:  Regular  Student  Corporate

\*Signature of Faculty Advisor: \_\_\_\_\_

Make checks payable to **SEMS** and mail to:

**Karen Kelley, Treasurer**  
**PO Box 118525**  
**University of Florida**  
**Gainesville, FL 32611**

