NEW AND/OR INTERESTING IN MICROSCOPY

★ **Certification in Applied Chemical Microscopy**

McCrone Research Institute has begun a certification program in Applied Chemical Microscopy. The program has been developed in response to growing student and employer interest in formal individual assessment by the Institute. Employers have been seeking more specific educational goals, with documented student performance and skill assessment. Students have also been interested in more formal evaluation and documentation of their capabilities in Chemical Engineering.

Certification in Applied Chemical Microscopy is based on (1) successful completion of McCrone Research Institute courses satisfying certain breadth requirements, (2) passing of a comprehensive written examination, and (3) passing of a series of practical proficiency trials. Upon successful completion of the requirements, candidates will be Certified for their knowledge and ability in Applied Chemical Microscopy.

Individuals interested in this certification program should contact: McCrone Research Institute, 2820 S. Michigan Avenue, Chicago, IL 60616, Tel.: (312)842-7100, fax: (312)842-1078, eMail: info@mcri.org, www: http://www/mcri.org

★ **Workshop on Quantitative Image Analysis** by Dr. John Russ, and sponsored by the North Carolina State Univ., continues in it's 15 plus year:
May 21/23 and 25/27 1998 at North Carolina State Univ., Raleigh, NC
June 15/18 1998 at the Danish Technological Institute, Taastrup, Denmark

For information, contact Kelly Pendergraft at (919)515-8171 or visit their website: http://members.aol.com/IP/Course

Our Mailing List

Due to the number of individuals (potential advertisers and otherwise) who have recently requested information as to our mailing list, we submit the following information.

Our current base mailing list includes 12,420 microscopists in the U.S. This list was developed from some 50 different sources - including the MSA and MAS, and all 31 local society, membership lists; attendance at recent microscopy-related conferences and attendance at major microscopy-relate educational activities (Lehigh, McCrone, etc.). With a first class mailing made recently to this list, and non-deliverables returned for correction, we submit that this list is reasonably current.

From the above base list, there are currently 7,489 microscopists in the U.S. who have requested our publication. As we receive an average of some 50 address corrections each month, we submit that this list is even more up to date.

From this total of 7,489 U.S. microscopists, 6,141 have identified themselves as "users" of microscopy equipment - the balance of 1,348 being manufacturers/suppliers.

For the 6,141 "user" microscopists in the U.S., their scientific interest breakdown is as follows:

Physical/Material Sciences:	3,480
Biological/Biomedical Sciences:	3,061
Earth Science:	885

And from a more application/equipment view, the "user" breakdown is:

Electron Microscopy:	5,295
Confocal Microscopy:	1,574
SPM/AFM:	1,066
Light Microscopy:	4,552
IR Microscopy:	970
Acoustic Microscopy:	259

While we do not provide our list to any party, we do provide a mailing service, based on any interest combination of the above. For further information, contact Microscopy Today.

IS THERE A SANTA CLAUS?

A contribution from Jane O'Brien (in Ireland)
as found on the Internet by a James J. Elliot

1) No known species of reindeer can fly. BUT there are 300,000 species of living organisms yet to be classified, and while most of these are insects and germs, this does not COMPLETELY rule out flying reindeer which only Santa has ever seen.

2) There are 2 billion children (persons under 18) in the world. BUT since Santa doesn't (appear) to handle the Muslim, Hindu, Jewish and Buddhist children, that reduces the workload to 15% of the total - 378 million according to Population Reference Bureau. At an average (census) rate of 3.5 children per household, that's 91.8 million homes. One presumes there's at least one good child in each.

3) Santa has 31 hours of Christmas to work with, thanks to the different time zones and the rotation of the earth, assuming he travels east to west (which seems logical). This works out to 822.6 visits per second. This is to say that for each Christian household with good children, Santa has 1/1000th of a second to park, hop out of the sleigh, jump down the chimney, fill the stockings, distribute the remaining presents under the tree, eat whatever snacks have been left, get back up the chimney, get back into the sleigh and move on to the next house. Assuming that each of these 91.8 million stops are evenly distributed around the earth (which, of course, we know to be false but for the purposes of our calculations we will accept), we are now talking about .78 miles per household, a total trip of 75-1/2 million miles, not counting stops to do what most of us must do at least once every 31 hours, plus feeding and etc.

This means that Santa's sleigh is moving at 650 miles per second, 3,000 times the speed of sound. For purposes of comparison, the fastest man-made vehicle on earth, the Ulysses space probe, moves at a poky 27.4 miles per second - a conventional reindeer can run, tops, at 15 miles per hour.

4) The payload on the sleigh adds another interesting element. Assuming that each child gets nothing more than a medium-sized Lego set (2 pounds), the sleigh is carrying 321,300 tons, not counting Santa, who is invariably described as overweight. On land, conventional reindeer can pull no more than 300 pounds. Even granting that "flying reindeer" (see point #1) could pull TEN TIMES the normal amount, we cannot do the job with eight, or even nine reindeer. We need 214,200 reindeer. This increases the payload - not even counting the weight of the sleigh - to 353,430 tons. Again, for comparison, this is four times the weight of the Queen Elizabeth.

5) 353,000 tons travelling at 650 miles per second creates enormous air resistance - this will heat the reindeer up in the same fashion as a spacecraft re-entering the earth's atmosphere. The lead pair of reindeer will absorb 14.3 QUINTILLION joules of energy per second EACH. In short, they will burst into flame almost instantaneously, exposing the reindeer behind them, and create deafening sonic booms in their wake. The entire reindeer team will be vaporized within 4.25 thousandths of a second. Santa, meanwhile, will be subjected to acceleration forces 17,500.06 times greater than gravity. A 250-pound Santa (which seems ludicrously slim) would be pinned to the back of his sleigh by 4,315,015 pounds of force.

In conclusion - If Santa ever DID deliver presents on Christmas Eve, he's dead now.

(This is a theoretical model that obviously has not included factors such as elf-magic or enchanted reindeer.)