MicroNews

San Francisco Microscopical Society Volume 2, #2 December. 2007

MicroNews Shorts

What happens to science and science education when only 66% of the population accepts the concept that evolution causes speciation? That is the current status in the US as revealed by a Michigan State University poll. Contrast that with countries such as Icelland, Denmark, Sweden and France where at least 80 % accept the concept. In Japan the number is 78%. Realize that this may well include 1/3 of the teachers on whom we depend to provide students with information.

C. elegans, a microscopic nematode widely used as a laboratory study animal, (demonstrated at one of our meetings by Bill Heib) provides convincing evidence of speciation in experiments conducted in Spain and described in the Scientific American, December 2007 issue on page 36.

Dues for 2008

If you are a Life member, no dues are due. If you are a student who completed the microscopy course in the Spring 2007 (Dr. Baysdorfer's) class, NO dues are due for 2008.

SFMS Membership dues for 2008 are $12.00 or $144.00 for Life membership.

Send dues to: SFMS Treasurer
20 Drake Lane,
Oakland, CA 94611-2613

NON-Minutes of the SFMS Board of Directors, Meeting December 8, 2007

There is a good chance that only a few members will be willing to read through the actual minutes of the meeting so this will strive to be a more lively report of an afternoon that portends some change for the Society in 2008. It was fortunate that all the board members were present since that spreads the blame evenly. (The board members are listed on page four.) Did they show up from a sense of duty or from sheer hunger for the lunch that preceded the meeting? We will never know for almost all the food was gone before the meeting got underway at one thirty.

Board meetings are open to all members and this one was attended by three active members, Bill Heib, John Field land Scott Miller. Each was invited to contribute to the discussion and to participate in the lunch. Three wives also were there, including the hostess, who had just returned from attending another brunch when the meeting started. The wives busied themselves with other activities. We thank them for their assistance in preparing some of the food.

The report from the board members was rapid and succinct. The Treasurer (and editor of this article) assured the group that money was available since nothing much had been spent since the last meeting other than bank fees. He reminded others that expense reports were due by the end of the year and called for an audit. Scott, who is a CPA, volunteered to conduct the audit. Most of our expenses deal with printing costs and mailings. Maintaining the web site also requires funds.

Programs

The VP and Program Chair, one and the same person, outlined what is lying in store for the unsuspecting members of the Society. The Tuesday, January 15, 2008 meeting will be at the Randall Museum and will be both entertaining and important. Looking at the Bible through a microscope will be just one minor feature of the evening. Every effort will be made to make this SF meeting interesting and rewarding but you must be there to enjoy it so put it on your calendar. Yep! It is the third and not the second Tuesday. You also get to vote for your favorite officers and possibly a change in the structure of the board.

Read the President's Corner and note that this is an opportunity for you to leap-frog all those anxious souls who want high office but do not know how to lobby and get themselves elected. Lack of experience is not a deficit but will *actually be an asset*. The only way to get experience is to be the president so here is the quickest path to that lofty

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office: volunteer! Let any officer know that you would like to have your name placed in nomination. After all. What is the worst thing that could actually happen? Get elected? So that takes care of January.

March 11, that is the second Tuesday, is the next meeting and we expect to meet at the Randall again. The program chair is looking into a speaker and there are a number of options including trading microscope parts, seeing things that you only can see with a microscope, or discovering some new techniques that you may not have ever tried. None of the meetings are dull when you have an open mind and are willing to participate.

As the weather turns warm and dry, we expect to take an unusual field and camping trip to Healsberg where we will stay at the ranch of one of our members (some camping equipment required) and look at organisms from the soil and the local environment. Then, as the night becomes dark, we will have a star party! Never been to a star party? Powerful telescopes will be available to study the heavens on this moonless night. With the city lights far behind us we will see plants and constellations as if they were there to touch. Astronomers will double or triple your understand-ing of stars and the cosmos. This excursion is an opportunity to leap from the minute to the very large. So carpool on May 3-4 and come to a most interesting even. Some food will be provided and space for tents is free. Motels nearby are expensive.

On Tuesday, May 13, 2008 we will meet at the Randall again but other than the date we are unable to provide you concrete information.

Outreach or Workshops

President Ray Wong proposed that a committee be established to promote events that will encourage individuals to learn more about microscopy. One avenue is through the Yahoo Group. John Field volunteered to focus his energy on ideas to bring to the board for their funding and the boards approval. VP Bill Hill has six students from CSU-EB who want to form a Micro-Club to meet regularly to develop their microscopy technique. One of these students has purchased a microscope and is working with Mikki McGee who is mentoring the student.

(We need more mentors who will work with a student once a month! Do you have the time?)

Merritt College, the Oakland Community College, is setting up a program of study for microscopy with emphasis on confocal microscopy. When this program gets underway it will need mentors and will be a source for new members.

The board approved the establishment of the committee that will initially be chaired by Ray Wong.

Dinner Anyone?

Peter Barnett and Henry Schott agreed to look into restaurants that could be used to hold an annual dinner get-together and report at the next board meeting since now it is to late for 2007.

Ultraphot III

The Society owns a superb instrument with many attachments. This Zeiss microscope is very large and needs room to be available to interested members. Peter Barnett has offered to provide room at his FSA Laboratory and to give access to the instrument during regular business hours. This is a 1000 x improvement over Henry's unheated garage where it has been stored for over a year. The instrument will be moved in January and members will be able to use it after they participate in a basic users workshop designed to safeguard the user and the instrument.

Filling Vacant Board Positions

A motion was passed (4:1) to fill any vacant position on the board by assigning board members to that position as "Acting" for a four month period will guarantee that the board will not fail to have some leadership or service until a candidate for the position is found. Members need to be aware that the Society can not ***long continue without active participation*** from its members. New members are encouraged to identify themselves as interested in serving on the board of directors. It is a good position for developing leadership abilities.

Elections

Our constitution calls for election to be held in January of each year. A nominating committee needs to be formed to put forward candidates but the lack of board planning has resulted in no such committee. The election will be held at the January meeting but the board agreed that only one secretary is needed and the two positions, recording and corresponding will be combined into one. Since Peter Barnett resigned as recording secretary, the Society hopes that Linda Wraxall will stand for the office of "Secretary".

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President's Corner

December 2007

Ray Wong

I accepted the presidency as a one-year interim position, a position that has lasted two years. The year I became president of the society, I had to put on hold an astronomy program I was working on for the California School for the Deaf in Fremont. I feel that I can no longer keep that program on hold. I feel that the deaf community is severely under-served by the community, so I must move on to assisting them. I will be stepping down after the elections held in January 2008.

During my second year as president of the society, we have held two microscopy workshop at California State University, East Bay (formerly Cal State Hayward). We also participated in a microscope workshop for teachers with the Math Science Nucleus in Fremont. At the December 2007 Board of Directors meeting, I requested that the society establish an '*Outreach and Training'* committee – a committee dedicated to workshops on which I will be serving.

Outreach and training which is part of the society's mission statement, was my primary goal in accepting the nomination and position as president My thanks to Henry Schott, Helmut Will, John Field, Bill Hill, Mike Kan and Mikki McGee for their assistance in presenting the workshops. Without their assistance, the workshops would not have taken place. I also thank Dr. Baysdorfer of the State University for inviting us to offer these workshops.

We have also had a couple 'fieldtrips'. The first was at Filoli Gardens in Woodside and the second at the Tule Pond in Fremont. An overnighter at Jackie Landridge-Sahud's ranch up in Healdsburg that was postponed because of bad weather, is tentatively rescheduled for the first weekend in May, 2008. I will continue to coordinate the logistics for the Healdsburg fieldtrip.

My thanks go to the society's members for allowing me the pleasure and honor of serving as the 2006-2007 president of the San Francisco Microscopical Society.

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COMMUNICATIONS FROM MEMBERS

I recently bought a Logitech QuickCam Pro 9000 webcam with high definition video capability.I tested it out on my American Optical 120 microscope and posted a couple of test videos and a still photo at the following link:

http://cavalue.googlepages.com/home

The video resolution is 960 x 720 at 15 frames per second. Still photo resolution ranges from 1.3 to 8 mega pixels. The camera connects to a PC via USB2.

The webcam is advertised as having a Zeiss glass lens. The optical coatings look green, so I assume at least some are multicoated. The camera lens is permanently attached.

I connected the webcam to my microscope with a Lumicon universal digi-cam adapter via the trinocular phototube. The adapter clamps to the phototube eyepiece. I used a small C-clamp to secure the camera to the adapter. I found that I needed a 15x ultra w.f. eyepiece to fill most of the field of view. The video frame is not completely filled, but it is not bad considering the wide angle lens of the webcam. The camera does not have an optical zoom. There is a digital zoom that can be used to completely fill the video picture, but it degrades the view.

It was easy to get everything properly positioned. The camera stand articulates to permit a number of adjustments. Plus, it stays where you put it and doesn't drift.

My opinion is that it works great and is simple to use. The high definition video is fed directly from the webcam to the computer screen. The view on the computer screen is exactly the same as the recording. You can't tell the difference between live video and a video recording. You just click a button on the screen to record a video or take a picture. Microscope focusing is simplified by using the real-

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The office of President will be vacant if no candidate can be found. As a former president, I can assure any member that the responsibilities are highly overrated and that the task is manageable even if (and especially if) you are busy and dedicated to other tasks. What you do need to do is *delegate* and then follow up. Much of this is done by phone so a cell phone is handy. Expenses are covered by the Society so no out-of pocket costs are incurred. *This is not a position where experience is required but it is a position where experience can be acquired*! The past presidents will all act as mentors to the willing candidate. Contact Ray Wong qm7@yahoo.com if you would like to be considered for the position.

The board created the position of Society Historian and appointed John Field as Historian. Dr Field is particularly interested and knowledgeable about historical microscopes and has frequently demonstrated 19th century microscope slides and instruments. His active participation and continued service to the Society is very much appreciated by members.

Camera Adapters

Scott Miller demonstrated the camera adapters that he has for microscopes after Ray Wong proposed that the Society purchase a set of adapters to loan out to members. Pete commented that we should not be in the loan business but offered that we could make grants to those in need of special items that they could not otherwise afford. (Copies of the actual minutes will be available to all members.)

The San Francisco Microscopical Society.
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20 Drake Lane, Oakland, CA 94611-2613

Editor: The Editorial Board
Send articles or news to the above address or call: 510-222-8883 or 510-339-9609.

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time high resolution video displayed on the computer screen.

The camera software allows manual control of focus, gain, exposure, brightness, contrast, color intensity, and more. It is easy to change resolution and switch between video and still photos. The color is very nice and it is easy to get the proper lighting. Video noise seems to be fairly low. The only drawback is that fast moving subjects blur at the 15 frames per second rate.

For live video of stationary objects such as prepared slides or slow moving microbes, the view is pretty good. The test video that I posted is a tiny fly on a test slide in darkfield and brightfield. It should give you an idea of what you can expect.

This type of setup might be useful for group presentations. I will bring it to a meeting some time if there is any interest. (There always is!)*

Here is a link to the camera's details:

http://www.logitech.com/index.cfm/webcam_communications/webcams/devices/3056&cl=us,en

* Editor. The above was sent to members who have e-mail and is reproduced to provide a more permanent record and to inform those who do not have e-mail or do not read all of their e-mail. H. Schott, editor.

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Confocal Microscopy

Is an optical imaging technique used to increase micrograph contrast and/or to reconstruct in a computer three-dimensional images by using a spatial pinhole to eliminate out-of-focus light or flare in specimens that are thicker than the focal plane.

The principle of confocal imaging was patented by Marvin Minsky in 1957. In a wide-field fluorescence microscope, the entire field is flooded in light from a light source. Due to the conservation of light intensity transportation, all parts of the specimen throughout the optical path will be excited… In contrast, a confocal microscope uses point illumination and a pinhole in an optically conjugate plane in front of the detector to eliminate out-of-focus information. Only light within the focal plane can be detected. So the image quality is much better than that of a wide-field image. As only one point is illuminated at a time in confocal microscopy, 2D or 3D images require scanning over a regular raster in the specimen. (Copied from Wikipedia & edited.)