The Colorado Society for Histotechnology S/C was held in Estes Park, Colorado April 23-24, 2004

^ Dr. Martin and Sharon gave us insight into the new diagnostic test for colon cancer using EGFR IHC.

^ (L-R) Petra Engle, John McGinley, Mary Daniel, Dr. Meenakshi Singh and Nicole Spoelstra relax at the social on Friday after the presentations.

^ A picture a snow covered mountain top in Estes Park. Photo courtesy of Lisa Litzenberger.
Greetings,

First of all I would like to thank all of the people who attended the 2004 meeting in Estes Park. The weather presented a significant challenge the weekend of the meeting and I appreciate the extra effort by all who braved the elements. I want to thank all of the speakers and exhibitors who participated in the meeting this year. In addition I would like to thank the committee chairs and volunteers who really helped to make this meeting a success, especially Stacey Langenberg for providing us with such a great and diverse program. I also want to thank Rick Garnhart, Dave Davis and Mike Berry for their role in recruiting all of the exhibitors. Twenty four companies participated this year and response was so overwhelming that we had to turn three companies away due to lack of space. Special thanks go to Barb Davies for her wonderful catering selections. Last, but not least I want to thank Gina Sennello and Andrea De Jager for doing an outstanding job of running the registration table.

It’s been one month since the meeting and looking back I think I can say that overall it was a big success, but it was an uphill battle all the way with the hotel. Both CSH and MSACT societies experienced numerous problems with the Stanley hotel during the meeting and while it appeared to run fairly smooth on the surface in reality it was controlled chaos at best. The hotel management failed to mention that construction was going on beneath the classroom floors in the Manor house until the night before the meeting. I pleaded with management to stop construction or at least take extended breaks during times when the rooms were in use, but they refused. We ended up moving one of the classrooms to the music room in main hotel on Friday due to the noise level. Unfortunately, we couldn’t keep the music room because MSACT had booked it for the remainder of the weekend. The Hotel staff promised that construction on Saturday would be limited to quiet activities. However, such was not the case and we had to move two afternoon presentations to the third floor. Twenty five people were crammed into this small area and fans had to be brought in for ventilation. Stacey had a difficult time trying to keep the housekeeping staff quiet during presentations. Just when you thought things couldn’t get any worse...management had neglected to inform us that a door behind the projection screen in the classroom lead to guest rooms and people were walking in and out during the presentation. It was an embarrassing situation for those involved with the meeting and I felt terrible for Dr. Martin and Ms. Lear who took time out of their busy schedule to come and speak at our meeting and were subjected to such poor conditions.

There were scores of other problems as well from food not arriving on time, inoperative microphone and sound equipment, to exhibitor materials being lost or misplaced. It became clear very quickly that the hotel was ill-prepared to handle such events and that management, or the lack thereof, was the real problem. During the 10 month planning period from July 2003 until April 2004 I dealt with six different conference coordinators. That high rate of turnover should have been my first clue that something was wrong, but hindsight is 20/20. The hotel did give the society a small discount to compensate for all of the problems, but it was poor consolation when you consider the countless hours of planning and preparation that go into such an event.

While most would agree that the venue this year was beautiful I don’t think that we will be returning to the Stanley hotel any time soon. Even if the meeting had run as smooth as silk the Stanley is not the ideal location due to lack of elevators, inadequate handicap accessibility and separate buildings for guest rooms, classrooms, and vendor exhibits. In the future we should consider holding the meetings at hotels or conference centers where everything is housed under one roof with adequate facilities and effective management. Plans will be underway very soon for the 2005 meeting. If you are interested in being a committee chair or would like to volunteer please send an email to john.mcginley@colostate.edu or call (970) 491-3041.

Regards,

John McGinley
President

Dinner at the Twin Owls restaurant (Black Canyon Inn) with the speakers on Friday night was very special at the meeting in Estes Park

>>>
John McGinley and Rick Garnhart are co-awarded "Histotech of the Year"

"VENDOR OF THE YEAR AWARD" went to MISTY BROWN, shown below at her Statlab Booth.

New Kid on the Block award recipient: Nicole Spoelstra wins a bag from Richard Allan rep, Jeff Nauseda during vendo.

Congratulations Patsy Kelly! You were chosen for the 2004 President’s Award and you deserve it.
Spotlight on NSH Region VII

Submitted to NSH in Action 5-04 by:
Patsy Ruegg, Region VII Director

Included in Region VII are the south and northwestern states in the USA from Arizona to the south all the way to Idaho to the north. There are six states in Region VII, Arizona, Colorado, Wyoming, Montana, Idaho and Utah. This is a very large Region, in area at least. It is about 1200 miles from Arizona to Montana/Idaho. Because of the vast area between the states we do not get general Region attendance at our Region meetings. Our Region meetings are pretty much state meetings where they are being held.

There are three NSH constituent societies in Region VII, Colorado, Arizona and Utah. The Wyoming members tend to come to state meetings in Colorado and we sometimes get Utah people as well. Colorado often has New Mexico people attending our meetings even though they are not in Region VII but in close proximity to Colorado. The Idaho and Montana people usually attend meetings in Oregon, Washington or California because they are closer than Colorado or Arizona. Colorado and Arizona have been the most active states in Region VII during my tenure.

There are 68 NSH members in the Colorado Society for Histotechnology (CSH) right now. Colorado just had it’s state meeting at the Stanley Hotel in Estes Park. We had a really good turn out and our program was outstanding. We partnered with the Mountain States Society for Cytotechnology. Combining our meeting with this group gives us more numbers for mountain resorts and we share some exhibitors. Over the years we have combined with the Cytology group successfully allowing us better options for going to some of the larger mountain resorts which require a bigger hotel block than we usually have at the Histology meeting alone. John McGinley is the president of CSH and has brought tremendous organization to the society. John works at Colorado State University (CSU) where he can host our web sites on his server there. We have a Region VII web site www.nshregion7.org and a CSH web site www.coloradohisto.org. Having these web sites has made communication very efficient in Colorado and the Region. The CSH newsletter is posted on the CSH web site. This saves us in printing costs as we can mail out the newsletter in black and white but our members still have the option of printing it in color on their own printers off the web site. We never really submit our newsletter to NSH for the NSH newsletter of the year award because the print is not very spectacular but when viewed from our web site it can be very nice. It would be nice if NSH would recognize state newsletters on web sites or just state web sites in general. We have some very dedicated people in Colorado working for CSH and NSH.

Arizona (Arizona Society for Histotechnology (ASH) www.arizonahisto.org) has 108 NSH members. For the past 10 years or so Arizona and Colorado have taken turns calling their annual meeting a Region VII meeting. This year Arizona is having the Region VII meeting June 3- 5 in Phoenix. I will attend this meeting as Region Director and speaker. The president of ASH is Karen Lahti right now. Andi Grantham and Catherine Rangel share the ASH newsletter duties. The NSH S/C will be held in Phoenix in 2006. Arizona and the Region are working hard to prepare for this event.

Utah was inactive but has just now come back as an NSH constituent society in the last couple of years. Lance Erickson is the President of their state society. Lance came from Washington state and really managed to get Utah involved again. Last year he hosted the first meeting at Children’s Hospital where he works and had a really good turnout. He setup a web site for Utah using the host offer by Lab Vision. The web site address is www.utahhisto.org. Utah is planning another meeting this year August 6th and 7th. At the Region VII meeting at the NSH S/C in Louisville last year our Region decided to include Utah in the so called Region VII meeting circle. Colorado will host the Region VII meeting in 2005 and then Utah will have that opportunity in 2006 when the NSH S/C is in Arizona.

Region VII is not very large in NSH numbers but we are very rich in people dedicated to the histotechnology community, NSH and our individual state societies.

NSH News 5-04

- This is an election year make your vote count, send it in!
- Renew your NSH membership, HOD delegates must have NSH membership renewed by Aug. to sit in the HOD
- The NSH S/C program for the meeting in Toronto is out, if you need one go to www.nsh.org
- HISTOQIP (the external histology review program) is going strong, go to www.cap.org to register your lab
The Colorado Society for Histotechnology and the Mountain States Association of Cytotechnologists wishes to thank the following Exhibitors for their participation in the 2004 meeting at the Stanley Hotel in Estes Park, Colorado

Anatech, Ltd.  Newcomer Supply
Biocare Medical  Nikon Instrument
BioGenex  Olympus America
B/R Instruments, Corp.  Richard-Allan Scientific
Cardinal Health  Sakura Finetek
Decon Laboratories, Inc.  StatLab Medical Products
Creative Waste Solutions  SurgiPath Medical Industries
Cytyc Corporation  Thermo Electron, Corp.
DakoCytomation  Triangle Biomedical Sciences
E. Licht Company  TriPath Care Technologies
Fisher Healthcare  Ventana Medical Systems
Zymed
One of our colleagues, Judi Tuffield, is suffering from an early, rare form of Alzheimer's.

People who wish to visit or write Judi can reach her at the following address:

Sierra Community Cornerstone Nursing Home
1432 Depew St
Denver
303 238-1375
(3 blks West of Sheradin one 1/2 blk South of Colfax)

Reminder! renew your NSH membership by Aug. if you are an HOD delegate.

Patsy Ruegg will broadcast her “Taking the QIHC Exam” talk as an NSH Teleconference from The Children’s Hospital Denver Pathology Library on July 21, 2004 at 11 AM mountain time. Those in the region are welcome to attend this broadcast free of charge. To reserve your place and get directions to Children’s contact Sara Williams 303-861-6177 Garza-Williams.Sara@tchden.org
<table>
<thead>
<tr>
<th>Counter Stains</th>
<th>Epitope Retrieval</th>
<th>Buffers</th>
</tr>
</thead>
<tbody>
<tr>
<td>S2042</td>
<td>S2307</td>
<td>S2137</td>
</tr>
<tr>
<td>Dilute Mayer's Hematoxylin</td>
<td>Citrate Buffer 0.01 M pH 6.0</td>
<td>Tris Buffer 0.05 M pH 7.6</td>
</tr>
<tr>
<td>S2326</td>
<td>S2503</td>
<td>S2139</td>
</tr>
<tr>
<td>Methyl Green 0.5%</td>
<td>EDTA 1MM pH 8.0</td>
<td>Tris Buffered Saline pH 7.6</td>
</tr>
<tr>
<td>S178</td>
<td>S2440</td>
<td>S2160</td>
</tr>
<tr>
<td>Eosin Y 1% Aqueous</td>
<td>EDTA / Citrate Buffer pH 7-5 – 8.0</td>
<td>Trypsin Calcium Chloride 0.1% pH 7.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S2261</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Working Phosphate Buffer pH 7.2-7.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S2138</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Phosphate Buffered Saline 0.01 M pH 7.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S2314</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Phosphate Buffered Saline 0.01 M pH 7.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S2237</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Phosphate Buffered Saline 0.05 M pH 7.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S2213</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Phosphate Buffered Saline 0.1 M pH 7.4</td>
</tr>
</tbody>
</table>

This is only a partial listing. If you do not see what you are looking for, give Customer Service a call at 800-645-5825 and they will be happy to help you.

A Material Safety Data Sheet is automatically computer generated with each initial order.

Poly Scientific R&D Corp.
70 Cleveland Avenue • Bay Shore, NY 11706
(800) 645-5825 • fax (631) 254-0618
http://www.PolyRnD.com
FEATURED PRESENTATION

TISSUE MICROARRAYS
Meenakshi Singh, MD
University of Colorado Health Sciences Center, Denver CO

Tissue Microarray (TMA) is a method of relocating tissue from multiple conventional paraffin blocks into a new block which finally contains representative tissue from all the original blocks. Sections from a TMA block therefore contain tissue from multiple sources. The advantage of TMA is that it provides a high-throughput method of analyzing the expression of multiple markers in numerous specimens and multiple lesions from each specimen with a uniform and standardized immunostaining approach. It is particularly useful in molecular profiling of tumors & cell lines (Kononen et al). TMA sections, like conventional sections are amenable to a wide range of techniques including Histochemical stains, IHC stains, ISH (mRNA & FISH) and microdissection: DNA, Protein.

Are IHC/ISH/FISH results obtained from TMAs reliable? How do results obtained from TMAs, where only small amounts of tissue from a case or a lesion are sampled, compare with those from regular whole tissue sections? Camp et al examined the # of disks required to be put into a TMA to adequately assess ER, PR & Her 2/neu (38 cases of invasive breast cancer). They studied 2-10 disks vs. whole tissue sections and found that analysis of 2 discs is comparable to the analysis of a whole tissue section in 95% of cases. They also found that many proteins retain their antigenicity for > 6 decades, thus validating their study in archival tissues.

Steps towards preparation of TMAs: (1) Locate and organize donor tissue blocks and H&E slides. (2) Create a grid and name the tissue cores on the grid. (3) Prepare the recipient block. (4) Organize H&E slides and tissue donor blocks. (5) Punch the donor block. (6) Punch the donor tissue core into the recipient block. (7) Level the cores with a spatula.

Sectioning the Array: (1) Carefully trim the block. (2) Tape transfer system is used. Most often you cut multiple sections to avoid loss of tissue. (3) Dip each section in melted paraffin once; cool & store in a slide box. Note: Some antigens are lost in pre-cut slides.

Limitations of TMAs: Formain fixed paraffin embedded (FFPE) tissue is used in TMAs. This permits protein or DNA extraction only and good quality RNA cannot be generally obtained. Use of non-cross linking fixatives such as methanol & ethanol can permit RNA extraction. However, prospective collection will be needed since archival material is all FFPE. Cryo-TMAs are being developed. Cases with heterogeneity of tumors and complex phenotypes may have to be excluded from TMAs or may need more cores to be sampled. Troubleshooting is simple and most issues can be corrected by adjusting the height of the turret, proper alignment of blocks with punch and not moving the punch at the wrong time.

Continued on next page...
**Image Analysis:** Automated TMA image analysis systems are available. The software is able to segment slides so as to recognize the individual cores of a TMA. Images of each core can be quantified according to threshold values. This results in uniform and objective interpretation of IHC results that can be correlated with clinical, epidemiological and outcome data. Image analysis of thousands of tissue samples in TMAs, and numerous antibodies per TMA, produces large amounts of data. This has created a need for software to aid in the analysis & storage of this data. Stanford researchers have developed a system for high-throughput analysis & storage of data. They use a combination of commercially available systems & novel software. This is powerful for detecting relatedness within groups of tumors.


**If we need TMAs do we all need to create our own?** Manual arrayers are available from Beecher Instruments, Inc. Sun Prairie, WI, [www.beecherinstruments.com](http://www.beecherinstruments.com). However, commercial arrays are also available.

In the future we envision that software innovations in the next few years will produce a seamless array production machine that imports data from epidemiologic databases, matches it with TMA disk locations & allows rapid analysis of data.

**References**

Camp et al Lab Invest 2000; Nat Med 2002;8:1323-27 (Yale)
Alizadeh et al J Pathol 2001 (Stanford)
Rimm et al Exp & Mol Path 2001;70: 255-64 (Yale)
Bremnes et al J Clin Oncol 2002;20:2417-28 (UCHSC)
Shaknovic et al Arch Path Lab Med2003;127:492-4 (Columbia U)
Hoos et al Lab Invest 2001;81:1331-38 (Memorial SK)
Hsu et al Mod Pathol 2002;15:1374-80(Stanford)
Yale Cancer Center-TMA facility website:
[http://www.yalepath.org/DEPT/research/YCCTMA/advtisarray.htm](http://www.yalepath.org/DEPT/research/YCCTMA/advtisarray.htm)

---

**Paraffinalia** is an official publication of the Colorado Society for Histotechnology.

Published quarterly (February, May, August and November) send info by the 15th of the month before each publication.

**Ads should be placed with:**

Rick Garnhart
Memorial Hospital, Histology Department
1400 Boulder Drive
Colorado Springs, CO 80909
P 719-365-5204 F 719-365-6908
Email: rick.garnhart@memhospitals.org

**Send articles and info to editor at:**

Patsy Ruegg
Fitzsimmons BioScience Park
12635 Montview Blvd, Suite 216
Aurora, CO 80010
P 720-859-4060 F 720-859-4110
Email: pruegg@msn.com
— Infection Controls —

**AUTOPSY HEAD DRAPE**
Contains particulate matter

- EASILY ASSEMBLED & DISASSEMBLED
- EASILY ADJUSTED for use overhead or torso
- ENTRY PORTS on all four sides with cover flaps
- EFFICIENT and ECONOMICAL

---

**TISSUE BAGS**
2x4 - 3x6 - 6x6 - 7x8 - 9x12 - 12x12

- Provides leaktight containment for specimen and fixative.
- Open and reclosable with double-loc closure
- Barrier film for long-term storage
- Space saving and economical

---

**Macro-Prep. Knives & Cutting Boards**

- Expendable/Disposable
- Longer lasting double honed edge
- Sheffield stainless steel blades
- No reprocessing with all in one disposable blade and handle.

Foam innerliner for pinning tissue.
Standard and metric scale on cutting surface.
Reference areas for assessing specimen size.
Ideal for photographic and may be incinerated.

---

**PROTECTIVE GLOVES**

Gauntlet for super secure protection from cuts

- Made of interlocking stainless steel rings designed to be worn between two latex gloves.

---

MARKETING INTERNATIONAL, INC.

P.O. Box 4835 • Topeka, KS 66604 • USA • Phone 785/272-4773 • 1-800/447-0173 • Fax: 785/272-4273 • E-Mail: mktgint@inlandnet.net
# Control Slides
## One End Frosted

<table>
<thead>
<tr>
<th>Cat#</th>
<th>Name</th>
<th>6 Slide Price</th>
<th>25 Slide Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>cs003</td>
<td>Acid Fast Bacteria</td>
<td>$23.50</td>
<td>$90.00</td>
</tr>
<tr>
<td>cs018</td>
<td>Alcian Blue</td>
<td>$40.00</td>
<td>$155.00</td>
</tr>
<tr>
<td>cs027</td>
<td>Amoeba</td>
<td>$40.00</td>
<td>$155.00</td>
</tr>
<tr>
<td>cs001</td>
<td>Amyloid</td>
<td>$23.50</td>
<td>$90.00</td>
</tr>
<tr>
<td>cs019</td>
<td>Argentaffin</td>
<td>$40.00</td>
<td>$155.00</td>
</tr>
<tr>
<td>cs028</td>
<td>Argyrophil</td>
<td>$40.00</td>
<td>$155.00</td>
</tr>
<tr>
<td>cs015</td>
<td>Australian Antigen</td>
<td>$40.00</td>
<td>$155.00</td>
</tr>
<tr>
<td>cs009</td>
<td>Bile</td>
<td>$23.50</td>
<td>$90.00</td>
</tr>
<tr>
<td>cs031</td>
<td>Bodian's for Nerve Fibers</td>
<td>$40.00</td>
<td>$155.00</td>
</tr>
<tr>
<td>cs010</td>
<td>Calcium</td>
<td>$23.50</td>
<td>$90.00</td>
</tr>
<tr>
<td>cs033</td>
<td>H-Pylori (Campylobacter)</td>
<td>$50.00</td>
<td>$155.00</td>
</tr>
<tr>
<td>cs029</td>
<td>Copper</td>
<td>$40.00</td>
<td>$155.00</td>
</tr>
<tr>
<td>cs011</td>
<td>Elastic Tissue</td>
<td>$23.50</td>
<td>$90.00</td>
</tr>
<tr>
<td>cs017</td>
<td>Fat</td>
<td>$40.00</td>
<td>$155.00</td>
</tr>
<tr>
<td>cs004</td>
<td>Fungus</td>
<td>$23.50</td>
<td>$90.00</td>
</tr>
<tr>
<td>cs020</td>
<td>Giemsa</td>
<td>$40.00</td>
<td>$155.00</td>
</tr>
<tr>
<td>cs021</td>
<td>Glycogen</td>
<td>$40.00</td>
<td>$155.00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cat#</th>
<th>Name</th>
<th>6 Slide Price</th>
<th>25 Slide Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>cs002</td>
<td>Gram Organism</td>
<td>$23.50</td>
<td>$90.00</td>
</tr>
<tr>
<td>cs007</td>
<td>Iron</td>
<td>$23.50</td>
<td>$90.00</td>
</tr>
<tr>
<td>cs032</td>
<td>Lillie's for Connective Tissue</td>
<td>$40.00</td>
<td>$155.00</td>
</tr>
<tr>
<td>cs014</td>
<td>Leprosy</td>
<td>$50.00</td>
<td>$155.00</td>
</tr>
<tr>
<td>cs022</td>
<td>Luxol Fast Blue</td>
<td>$40.00</td>
<td>$155.00</td>
</tr>
<tr>
<td>cs026</td>
<td>Massons Trichrome</td>
<td>$40.00</td>
<td>$155.00</td>
</tr>
<tr>
<td>cs030</td>
<td>Mast Cells</td>
<td>$40.00</td>
<td>$155.00</td>
</tr>
<tr>
<td>cs008</td>
<td>Melanin</td>
<td>$23.50</td>
<td>$90.00</td>
</tr>
<tr>
<td>cs016</td>
<td>Methyl Green Pyronin</td>
<td>$40.00</td>
<td>$155.00</td>
</tr>
<tr>
<td>cs006</td>
<td>Mucicarmine</td>
<td>$23.50</td>
<td>$90.00</td>
</tr>
<tr>
<td>cs005</td>
<td>Periodic Acid</td>
<td>$23.50</td>
<td>$90.00</td>
</tr>
<tr>
<td>cs013</td>
<td>Pneumocystis</td>
<td>$40.00</td>
<td>$155.00</td>
</tr>
<tr>
<td>cs023</td>
<td>PTAH</td>
<td>$40.00</td>
<td>$155.00</td>
</tr>
<tr>
<td>cs024</td>
<td>Reticulum</td>
<td>$40.00</td>
<td>$155.00</td>
</tr>
<tr>
<td>cs012</td>
<td>Spirochetes</td>
<td>$50.00</td>
<td>$155.00</td>
</tr>
<tr>
<td>cs025</td>
<td>Trichrome</td>
<td>$40.00</td>
<td>$155.00</td>
</tr>
</tbody>
</table>

**100 Slide Sets are available as a special order**

Six slide set contains 1 stained control slide, 5 unstained slides, and a procedure packaged in a reusable Styrofoam box. Twenty five slide set contains 1 stained control slide, 24 unstained slides, and a procedure packaged in a reusable box. Please specify 6 or 25 slide set when ordering.

Please call customer service if you do not see a control that you desire. We may be able to accommodate you.

**Histology Control Systems, Inc**  
PO Box 142 • Glen Head, NY 11545  
800 253-2768 • fax (631) 242-4885