CHAIRMAN’S MESSAGE

Thanks to the hard work of all the members of our department, we have continued to provide excellent clinical services in all our sites of practice, we have expanded our research programs, strengthened our teaching of medical students, graduate students and residents. All of this was done with strict adherence to the demands for financial responsibility and within the limits and measure of our resources. Wherever it was possible and/or needed, we have provided salary increases to adjust for the increasing discrepancies between our salary levels and those of the market (academic and private).

Both Anatomic and Clinical Pathology groups have further organized the establishment of centrally driven QA/QC processes. The horizontal integration based on themes of service in all the hospitals labs has worked well. We have continued to attract high quality residents and we have paid utmost attention to organizing the intellectual resources available at their disposal. The number of graduate students mentored by our faculty has continued to expand, attracted by the research conducted by department faculty in tissue biology. We are now (in terms of graduate students) in the top three graduate programs in our School of Medicine. Our Pathobiology course for the Medical Students (as well as one for the graduate students!) continues to be very popular.

All of this activity proceeds because of good communications through all levels of the department governance. As the spring ritual of faculty evaluations proceeded this year, I was very impressed by the detail comments that were exchanged between the division directors and the faculty members in each division. Faculty meetings, although not always attended by the majority of the potential participants, proceed with free and open discussions on all topics. Division directors’ meetings provide in depth coverage of fiscal and administrative affairs and we strive to achieve consensus on all policies of high impact.

In the last several years I have been very impressed by the high quality of the faculty (full time and volunteer) who staff our peripheral hospitals. The in depth quality control processes, the intensity of consultations with the center and the interactions with the local medical staff are of the highest caliber which reflect favorably upon our Department as a whole and makes us proud. Several new faculty are joining our Department in peripheral hospitals, clinical labs, AP, CP, etc. Please make all of them feel welcome, accept them at their new sites and facilitate all possible collaborations. I particularly salute the arrival of three new faculty members at Magee Women’s Hospital, a place so near to the emotional heart of the Department.

As always, I extend an open invitation to all faculty and trainees of the Department to always approach me with any problems that would like to discuss. Direct input by the faculty is the most important calibrating tool for all Department chairs.

Again, I am taking this opportunity to thank everybody for their hard work and commitment to excellence.

George Michalopoulos, M.D., PhD.
Professor and Chairman

COMMUNITY PATHOLOGY PERSPECTIVE

A community pathologist in the UPMC system has many hats to wear. During a recent day working alone with my partner on vacation, many issues came across my desk. Justifying the Troponin gray zone. Adjusting critical values. Changing fasting glucose range to adhere to American Diabetes Association Guidelines.
Debating D-Dimer methods with cost and patient care issues. Considering changing from Bleeding Time to a better but more expensive test (Closure Time) when clinicians are content with the status quo. Evaluating various urine drug screen methods. Scheduling a Point-of-Care Testing Committee meeting. Monitoring the MISYS computer build at UPMC-Lee Regional Hospital. Signing out Pap smears and surgical pathology cases. Another day might involve preparations for chairing the Medical Ethics Committee, Infection Control Committee, or Tumor Conference.

So with all these hats to wear, work sometimes seem more like a balancing act than a walk through the park. A community pathologist must accept that he is proficient in many areas of laboratory medicine, but an expert in few if any. I need to know what I know, know what is known, and know when and who to ask for help. The UPMC system laboratory can form a network of support that undergirds the community pathologist, and a major component is effective COMMUNICATION. Pathologists at UPMC hospitals in Oakland have the subspecialty expertise to provide a gold standard of performance and support. This expertise must be communicated in efficient ways to community pathologists. Some of the most effective methods include email and feedback through representatives from subspecialty standardization committees, and regular discussions with laboratory managers. Similarly, a community pathologist may have special insight into the implementation of various plans at the grass root level with primary care physicians and their local subspecialists, but when we do not provide the appropriate feedback an opportunity for improvement is lost. Another factor that is required as we seek a seamless system of excellence with a team approach across our department is LEADERSHIP. Community pathologists must provide leadership on the local front, and pathologists at UPMC hospitals in Oakland must provide leadership on their end, as well as the accountability that they will implement the efforts in Oakland that they recommend for community hospitals. Community pathologists not only appreciate this leadership (especially from George Michalopoulos, Alan Wells, and Sam Yousem), we depend on it.

Therefore, as our system laboratory continues to improve in the development of this networked team approach, we look for areas for improvement. I will be soon forwarding community and academic pathologists surveys to further evaluate our current system, and hope that you will take time to complete your survey. Results will be summarized at the Pathology Retreat at Seven Springs Resort on June 13, 2004.

Will Farthing, MD Director of Pathology, UPMC-Lee Regional Hospital

ADMINISTRATION

You may have noticed that we have new names and faces in the Administrative Office. I would like to provide a formal introduction to everyone hired during this year and three more extremely capable staff members that will join us before July 1st. With the exception of coding positions and two research positions last year (one pre and one post award), all recruits are replacements. In many cases, vacant position recruitments were held due to budget constraints over the past two years. In some cases, for example coding positions, we were unable to recruit qualified candidates.

So in addition to formally welcoming our new administrative colleagues, I also must thank the dedicated staff that have worked so hard to meet Department needs for the last two years (or …4, 7, 17 years!!!).

Administrative Staff Introductions:

Ms. Nicole Lucarelli, Administrative Coordinator, provides general administrative support for the Department, support for Pathology Graduate Student and Post-Doctoral Fellow Programs and facilitates faculty recruiting, enrollment and credentialing. Nicole earned her Bachelors Degree in Communication from University of Pittsburgh at Greensburg in 2003 and joined the Department last October. Nicole’s sunny attitude, strong work ethic and desire to learn new things contribute to positive operation of the Administrative Office and the Department.

Ms. Susan Patak joined us as a Research Administrator with seven years experience in research submissions, accounting and management. Since Susan had worked in the Departments of Anesthesiology and Medicine (Pulmonary), she did not require any training
when she started. In fact, Susan has shared a wealth of knowledge and experience with all of us in the research area. Susan’s attention to detail, research compliance and follow-up are outstanding. Most significantly, Susan is always interested in learning new things and seeking additional responsibilities.

Ms. Trish Zrimsek provides support for the Pathology Residency Program, working with Curt Gettman and Dr. Naus. As we all know, Trish provided years of service to the Department of Pathology, Magee Women’s Hospital. She was looking for new challenges in the academic area and accepted an Administrative Coordinator position in my office. Within days, a staff member transfer left an opening in the Residency Program Office during the critical resident recruiting process. Trish may have set a record on “changing responsibilities” because hers changed before she arrived. The Residency Program Office is grateful for the experience she brings to her position and her support during the recruiting process and the internal review preparation was immeasurable.

Mr. John Moretti has been hired as a Senior Financial Analyst for the Department. He has and will assume a number of the data reporting projects from Brian Rudolph and will also contribute in report development for the billing operation. John has over 6 years of service with UPP, most recently in the Department of Cardiology. He served as a Practice Manager for UPP Physician Services and in that capacity is already familiar with Pathology billing issues. John’s UPP experience and knowledge of EPIC reporting functions will be a tremendous asset for the newly recruited Manager of Pathology Revenue Cycle and for the Department.

Ms. Debbie Kushner assumed the responsibility of Manager of Pathology Revenue Cycle. UPP patient billing has come “full circle” since 1999, with billing staff DE-centralized from the UPP billing office. Pathology EPIC patient billing responsibilities now include: electronic transfer of signed out cases from CoPath to EPIC work-queues, coding of diagnosis and procedures, EPIC institutional billing, limited patient registration, electronic release of charges and insurance edit/denial follow-up and management. Debbie brings extensive experience in billing analysis, management and insurance reimbursement. Her responsibilities also include documenting existing policy and procedures, developing new ones and designing a framework to address and document regulatory change. We are very excited to have someone with Debbie’s skills in this position.

Most Recent Recruits to arrive before July 1st:

Ms. Barb Schuchman, a certified Coding Specialist, will start in the billing office in June. She has 15 years experience in coding and claims processing. Although we always need to provide specialized training for Pathology coders, we have been unable to recruit for two open positions for over a year. Barb’s arrival is most welcome to Lisa Rankin, Tanya Jones and Tamika Gethers, all currently coding in the Department. Working many hours, Lisa, Tanya and Tamika have consistently coded and submitted approximately 900 case reports per day since last July. Barb’s arrival will allow Lisa to focus on her supervisory and reimbursement responsibilities and to assist Debbie in developing strategies to minimize insurance denials and maximize collections.

Ms. Judy Nestico, Manager of Administrative Support, will work closely with Nicole in general administrative support, academic program support, telephone coverage, faculty recruitment/enrollment/credentialing and facilities/maintenance. Judy has fifteen years of University experience, most recently as the Office Manager for the Chairman’s Office, Center for Philosophy of Science. During her University service, Judy has taken evening classes and expects to complete her BA in Fall 2004. Judy is excited about her new responsibilities and we are looking forward to her arrival.

Mr. Tom Wash has been recruited as the new Department Controller. Tom has fifteen years experience in accounting and finance, the last six within Anesthesiology and currently UPP. Tom brings strong financial, analysis, systems and management skills to his
new position and his internal experience will be invaluable. Tom is looking forward to again applying his skills in a Department capacity and everyone is looking forward to his start.

A summary of administrative staff, contact information and area of responsibility is attached to the back of the newsletter.

**A Note from Payroll Administration**

I would like to remind everyone that the payroll deadlines for each month are very early in the month. The paperwork is due one week prior to deadline in the Dean’s office for processing. If we miss this deadline we are charged a service fee to process the check. If this happens, I will be asking you to supply an account number to cover this expense. Otherwise, the employee will not receive a paycheck until the following month.

**SUPERVISORS OF WORK STUDY/STUDENT WORKERS:** All timesheets for your students are due in the office on the 10th of each month. Students should project the hours they will work up to the 15th of each month. Adjustments will be made the following pay period. Supervisors are responsible for making sure work study workers turn in their timesheets on time. If a student does not turn in their hours on time, they will not be paid until the following month! Payroll submission has been delayed several times due to “tracking down” timesheets.

Robin Eisenhart handles all visa issues for the department. Her telephone number is 648-1926 and her e-mail is: eisenhartr@upmc.edu. Please contact her directly if you have any questions or need to have your current visa extended. I will continue to work with incoming faculty who require visas for the first time.

**A few reasons to visit the Payroll Office:**

To get your pay stub – Even though you may have direct deposit, your stub provides proof of income and provides a list of your deductions. **Pay stubs are available on the last working day each month in Room S-417 BSTWR between the hours of 1-4:00 p.m.**

*Change in name or address* – If you change your name due to marriage or divorce, you must change it with Social Security first. Bring your updated card to the Payroll Office. Forms are available if you should change your address.

*Foreign Faculty/Staff/Students* – You should come by my office if:

- You have received your Permanent Resident “green” card
- You have recently received your authorization to work cards
- Your current visa has been extended. Please bring copies of the approval notice or new IAP-66

*Resignation* - Faculty should submit a resignation letter to Dr. Michalopoulos and Division Director. Staff should give a copy to their supervisor and should include your final date of employment. **This should be done within 24 hours after you have informed your Supervisor in order to process your paperwork.** Be sure to include your forwarding address so that your W-2 form can be forwarded to the correct address.

*To Hire New Employees* - Faculty wishing to hire staff positions should initiate this process through the Payroll Office. This includes foreign recruits also.

*Medical Leaves* - If you are going on leave or have just returned from a leave (personal or FMLA) you must let me know in order to get your paperwork in order.

*Tracking of Vacation/PH/Sick Time* - For staff, turning in your time sheet each month is mandatory for accurate vacation and sick time records. Timesheets are currently being sent via e-mail for all employees. If you are not receiving these, please contact me immediately to verify your e-mail address.

*To Change your W-4* - This will make tax time go more smoothly, and is often necessary if your status
changes (e.g. marriage, divorce, children). You may also need to change your deductions or have additional funds withheld.

**Direct Deposit** - Direct deposit is a convenience, however, difficulties arise caused by the following:

- You have closed your account without canceling your direct deposit with the University. If this happens, the bank may refuse the deposit and it could take 1-2 weeks before the University can issue your check.

- You have terminated your employment without cancellation of your direct deposit

Please keep in mind that the payroll deadlines are very early in the month and the sooner you tell me about new hires and changes, the better.

I can be reached at 648-1038 if you have any questions/concerns. Please call my office to schedule an appointment before “stopping by.” This will ensure that I’ll be available to discuss your issues/concerns.

Last, but not least, I would like to thank all of you for your kindness and get well wishes during my “time out” this past year. They were greatly appreciated and I’m glad to be back.

Carolyn Nolte
Payroll Coordinator

**VISA CORNER**

In case some of you were not aware, as of January 1, 2003 I have been processing visas for the Department of Pathology. There are some important factors regarding the time limitations issued by the Office of International Services (OIS). If applications are not received in the required time frame, as stated below, the international’s employment may be jeopardized.

There is a fee change for the H1-B visa effective May 1, 2004. The processing fee is now $185.00 and for the Form I-539 the fee is now $195.00. Checks are made payable to the USCIS. Please remember **DO NOT** date your checks. The premium processing fee of $1,000.00 remains the same for H1-B visas.

**IMPORTANT REMINDERS:**

- To print a visa application, go to the website: [www.ois.pitt.edu](http://www.ois.pitt.edu)

- The OIS is requesting all J-1 applications submitted to them **90 days prior** the internationals hire date, as well as, **90 days prior** the expiration date for current J-1 visas.

- The OIS will not allow any international to file for a H1-B visa until they have been on a J-1 visa for 21/2 years.

- Any international filing for a new H1B visa, or a H1-B extension must do so **6 months prior** to their hire date, or their expiration date.

- There is a **possibility** that a SEVIS processing fee of **$100.00** may be implemented as early as June 1, 2004 for all internationals applying for a J-1 visa, or who have been issued a DS-2019 on or after June 1, 2004. To date, the OIS has not been notified if this fee will be implemented. I’ll keep you posted of further developments.

If you have any concerns, please contact me at **412-648-1926** to schedule a meeting to come to my office at BSTWR-S417, or e-mail me at: [eisenhartr@umpc.edu](mailto:eisenhartr@umpc.edu)

Robin N. Eisenhart

**Annual Compliance Training**

All UPP faculty must complete Annual Compliance training for billing. Unless you attended the Compliance Training Sessions on: November 19, 2003; January 21, 2004; or March 16, 2004, you must
complete your annual requirement using the newly developed web training at <http://physiciansservices.infonet.upmc.com/Compliance>. Our goal is to have 100% of UPP-Pathology faculty training complete. If you would like more information on the Annual Compliance web training, please contact Nicole Lucarelli at 412-648-9550 or lucarellina@upmc.edu.

Database Update Reminder
In order to keep our database up-to-date, please remember to submit changes such as your home address, campus address, phone etc. as soon as possible to Nicole Lucarelli, Lucarellin@upmc.edu or to Carolyn Nolte, notlecr@upmc.edu. Thank you.

RESIDENCY PROGRAM UPDATE

Chief residents for next year are:

Anatomic Pathology Chiefs
Diana Ionescu, M.D. and Hina Sheikh, M.D.

Clinical Pathology Chiefs
Suzanne Bakdash, M.D. and Melina Flanagan, M.D.

New Slide Conference
Responding to the need for varied and continuous exposure to surgical pathology, a new unknown slide conference was designed and implemented for all AP and AP/CP residents. This conference occurs every Tuesday morning from 7:00-8:00 am and consists of the most instructive cases from all of the Center of Excellence in Anatomic Pathology. Attendance has been excellent and – except for the early hours – response has been overwhelmingly positive. Conferences have been facilitated by many of our AP staff, fellows and all four chief residents. The format is Socratic and collegial.

In addition to this new conference, the AP and CP didactics have been redesigned and follow the unknown slide conference every Tuesday from 8:00-9:00 am, with each week alternating between AP and CP presentations. A weekly autopsy conference has also been implemented, assuring that the significant value of these cases is made available to as many trainees as possible. Finally, a new series of management, ethics and research related topics (e.g. statistics) has been integrated into the Thursday noon conference series.

Recruitment was very successful for the upcoming year. We are very please to announce that our resident quota was filled from the match with six American and two international graduates. The following will be joining the Department this July: Simion Chiosea (State Medical and Pharmac University Nicolae Testemitanu-Romania), Joel Gradowski (Jefferson Medical College of Thomas Jefferson University), Craig Horbinski (SUNY-Buffalo School of Medicine), Teresa LaCarla (University of Pittsburgh School of Medicine), Deborah Marks (Temple University School of Medicine), Rosemary Recaverran (Universidad Peruana Cayetano School of Medicine-Peru), and Andrew Medicine), Siobhan O’Connor (University of North Carolina at Chapel Hill School of Medicine), Walls (University of Pittsburgh School of Medicine).

Greg Naus, M.D. – Residency Program Director

FELLOWSHIP PROGRAM
The Department of Pathology has centrally organized the 21 clinical fellowship positions from 12 separate clinical fellowship programs. Application to any individual fellowship program begins with a common web based submission followed by letters of recommendation and other written documentation. Each application is scanned into a PDF file format then emailed to all 12 fellowship directors for review. Each applicant is interviewed by the individual fellowship program in addition to 2 directors from other fellowship programs. This level of scrutiny guarantees careful review of all of our programs.

For 2004 the fellowship benefits were brought into agreement with our residency program and now administered centrally. The following clinical pathology fellows will be in training for 2004-2005:

<table>
<thead>
<tr>
<th>Residency/Fellowship</th>
<th>Director</th>
<th>Academic 2004 - 2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cytopathology</td>
<td>Ohori</td>
<td>Narasimhan Agaram - PGY7</td>
</tr>
<tr>
<td>Cytopathology</td>
<td>Ohori</td>
<td>Laurentia Nodit - PGY5</td>
</tr>
<tr>
<td>Cytopathology</td>
<td>Ohori</td>
<td>Kazuya Onuma - PGY6</td>
</tr>
<tr>
<td>Hematopathology 1st yr</td>
<td>Swerdlow</td>
<td>Matthew Smolkin - PGY5</td>
</tr>
<tr>
<td>Hematopathology 2nd yr</td>
<td>Swerdlow</td>
<td>Lorinda Soma - PGY7</td>
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<tr>
<td>Neuropathology 1st yr.</td>
<td>Wiley</td>
<td>Kathryn McFadden - PGY4</td>
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<tr>
<td>Neuropathology 2nd yr</td>
<td>Wiley</td>
<td></td>
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<tr>
<td>Pediatric Pathology</td>
<td>Jaffe</td>
<td>John Ozolek - PGY4</td>
</tr>
<tr>
<td>Surgical Pathology</td>
<td>Barnes</td>
<td>Imrana Ali -- PGY5</td>
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<tr>
<td>Surgical Pathology</td>
<td>Barnes</td>
<td>James Catropp - PGY5 - 1st 6 mos</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Oyedele Adey - PGY5 - 2nd 6 mos</td>
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<tr>
<td>Surgical Pathology</td>
<td>Barnes</td>
<td>Anuradha Singhal - PGY 6</td>
</tr>
<tr>
<td>Head &amp; Neck Pathology</td>
<td>Barnes</td>
<td>Adel Assaad - PGY4</td>
</tr>
<tr>
<td>Molecular Genetic Pathology  (SP-04)</td>
<td>Kant</td>
<td>Christine McMahon - PGY5</td>
</tr>
<tr>
<td>Molecular Genetic Pathology</td>
<td>Kant</td>
<td>Alexis Byrne Carter - PGY7</td>
</tr>
<tr>
<td>Blood Bank/Transfusion</td>
<td>Triulzi</td>
<td>(Michael Petzar)</td>
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<tr>
<td>OB/Gyn Pathology</td>
<td>Dabbs</td>
<td>Mamatha Chikvukula - PGY6</td>
</tr>
<tr>
<td>OB/Gyn Pathology</td>
<td>Dabbs</td>
<td>Kirtley Yearwood - PGY5</td>
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<tr>
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<td>Dhir</td>
<td>Marlo Nicolas - PGY6</td>
</tr>
<tr>
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<td>Randhawa</td>
<td>Chi Kien Lai - PGY5</td>
</tr>
<tr>
<td>GI Pathology</td>
<td>Sepulveda, A</td>
<td>Adrian Gologan</td>
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</table>

**GRADUATE PROGRAM UPDATE**

During the past year, a number of PhD candidates have successfully defended their thesis and graduated from the program. Please join me in congratulating the students and mentors. The graduates and their mentors are:

**Recent Graduate**
- Suhagi Jasani, M.S.
- Kien Tran, Ph.D.
- Douglas Green, Ph.D.
- Mihaela Avramut, Ph.D.
- Siva Raja, Ph.D.

**Mentor**
- Urvashi Surti
- Alan Wells
- Cris Achim
- Cris Achim
- Tony Godfrey
There are currently 24 Ph.D. candidates in the Pathology graduate training program, making our program one of the largest training programs at the School of Medicine. As the 1st year graduate students select their mentors during the next few months, hopefully we can add to the trainees within the program. A full list of the graduate students and mentors can be found on the departmental website.

The departmental retreat is scheduled at Seven Springs Resort June 11-13. Hopefully everyone has registered and plans to attend this important event. All trainees will be presenting their research during the retreat, and numerous faculty members will also provide oral presentations. Please check the retreat agenda listed on the departmental website http://path.upmc.edu/.

Robert Bowser, Ph.D. – Director

Division of Anatomic Pathology
Presbyterian Shadyside

Several exciting things have happened in Anatomic Pathology at UPMC Presbyterian Shadyside. A few of the significant ones are listed below:

- Michael Becich, MD, PhD has been promoted to Vice-Chairman of Pathology Informatics and Stephen Raab, MD has assumed the role of Chief of Pathology at UPMC Presbyterian Shadyside – Shadyside Campus, working closely with Samuel A. Yousem, MD, Vice-Chairman for Anatomic Pathology Services.

- Jennifer Hunt, MD, M.Ed. has assumed the position of Director of the Molecular Anatomic Pathology section in Anatomic Pathology with the departure of Sydney Finkelstein. The Molecular Anatomic Pathology Laboratory has reconfigured and revalidated many of its tests, and recently passed a CAP inspection. We expect that clinical and research testing will return to its usual state by early summer.

- Anatomic Pathology welcomes three new members to its staff. Anil Parwani, MD, PhD joins Anatomic Pathology and Pathology Informatics from Johns Hopkins University and will be based primarily at Shadyside with diagnostic pathology interests in genitourinary pathology; Daniel Sudilovsky, MD will be centered at Shadyside focusing largely on cytopathology and fine needle aspiration; Linan Wang, MD joins the Gastrointestinal Center of Excellence from the Mayo Clinic, Rochester, Minnesota.

- Five surgical pathology fellowship positions were accredited by the ACGME this year.

- The Anatomic Pathology Laboratories at UPMC Presbyterian and Shadyside successfully passed a CAP inspection in April 2004.

- Several awards were received by residents working with Anatomic Pathology staff members this past year:

  - Diana Ionescu, MD received the Pulmonary Pathology Society travel award; Deepak Mohan, MD received an award from the Pulmonary Pathology Society for best abstract/presentation at the USCAP meeting; Hina Sheikh, MD received the best paper award for the Endocrine Pathology Society; David Hwang, MD, a visiting fellow, received the Stowell-Orbinson Award and Autopsy Award at the USCAP meeting for work done on the SARS epidemic in Toronto.

  - Antonia Sepulveda was a recipient of an ROI award for her work on Helicobacter gastritis; Rajiv Dhir received a PCI award to study prostatic serum biomarkers.

  Samuel Yousem, M.D.
  Vice Chairman, Anatomic and Surgical Pathology
Section of Laboratory Medicine

The academic gains of the faculty in Laboratory Medicine continue to grow in scope and impact over the past year. This has been reflected in all areas -- publications, presentations and funding. Particularly exciting is that this increase is broadly-based due to successes by most of the members of the Department.

Over the past 5 years, the external funding coming through the Department of Pathology attributable to the faculty of Laboratory Medicine has seen an over eight-fold increase in external funding. In just the past year, notable gains in funding have been realized as new and renewed NIH funding for Jian-Hua Luo, Michael Shurin, Alan Wells (2), and Xiao-Min Yin. This is above and beyond existing NIH support for these PIs and others: Harry Blair, Tim Oury, Charles Rinaldo, Jorge Sepulveda, and Cary Wu. Industrial, foundation and other agency support remains strong through the Section, with many translational endeavors being pursued.

These new fundings recognize the substantive increases in impact studies published by these faculties including papers in Journal of Cell Biology, Cancer Research, and Journal of Biological Chemistry. Over the past year, both Cary Wu and Harry Blair published articles in Cell. National and international recognition of both continued and emerging expertise is reflected by numerous reviews and invited plenary talks at national and international meetings.

Teaching is strong on both the clinical and graduate education sides. Section faculty provide key course sections to second year medical students, but the main clinical education service is geared towards residents and fellows. Based on our entire faculty, the department just recruited its strongest class yet. And Laboratory Medicine graduated two straight LM residents (who both also undertook Transfusion Medicine Fellowships), Mark Fung and Lirong Qu, both of whom obtained positions in academic medicine. The Fellowship programs in Transfusion Medicine, Molecular Diagnostics and Hematopathology remain highly competitive and filled. Graduate teaching is a strength of the Section with two completed theses in the last year, and 7 other thesis candidates and one MD-PhD student in various research laboratories. Additionally, Rich Bodnar became our second individually-funded NIH post-doctoral F32 recipient.

In addition to these great strides, there have been significant advances in the clinical practices. The individual Division reports describe these in details and the surprising and continuing growth of the services. A few instances highlighted include UPMC system-wide efforts in bioterrorism and emerging infections (Bill Pasculle and Kirsten St George), BNP and troponin utilization (Jorge Sepulveda), and POCT implementation (Mohamed Virji). A new UPMC-wide endeavor in alternative medicine is being spearheaded by Bruce Rabin. Our nationally recognized centers of excellence in Hematopathology (Steve Swerdlow) and Molecular Diagnostics (Jeff Kant) continue to grow in excess to the system’s increases.

National recognition has flowed to our members with many holding leading governance positions in their fields. Jeff Kant was elected a Fellow of the American Association for the Advancement of Science, a very high honor for his work to establish molecular pathology as a academic discipline. Steve Swerdlow is on the Executive Council of USCAP and vice-president for the Society of Hematopathology. Alan Wells is past-president of the Academy of Clinical Laboratory Physicians and Scientists.

Lastly, I would like remind all of some faculty changes for this year. Tim Oury and Xiao-Ming Yin have been promoted to Associate Professors as recognition for their contributions and excellence. Karen Weck has left to become an Associate Professor at the University of North Carolina at Chapel Hill and Ileana Lopez-Plaza is joining the Transfusion Medicine service at the University of Massachusetts Medical Center. KN Rao is retiring from Toxicology after decades of invaluable service and collegiality. New faces include Mark Yazer who will shortly join the Transfusion Medicine service from Edmonton and Sara Monaghan is coming
to Hematopathology from Chicago. Our current Transfusion Medicine fellow Lirong Qu also will be staying on as a Visiting Assistant Professor in Transfusion Medicine. We expect other faculty will also be coming over the summer months as we are actively recruiting to fill positions left by Karen Weck and KN Rao.

Alan Wells, M.D. DMS
Vice Chairman
Section of Lab. Medicine

APIII 2003: Frontiers in Oncology and Pathology Informatics Advancing Practice, Instruction and Innovation Through Informatics

The Eighth Annual Conference on Advancing Practice, Instruction and Innovation through Informatics (APIII 2003) was held on October 8 – 10, 2003, at the Marriott City Center in Pittsburgh, Pennsylvania, sponsored by University of Pittsburgh School of Medicine, Center for Continuing Education in the Health Sciences, Benedum Oncology Informatics Center, Department of Pathology, and Center for Pathology Informatics, and UPMC Information Services Division.

The conference provided a broad overview of biomedical informatics in pathology and oncology practice, education, and research. The course directors were Rebecca S. Crowley, MD, MS, Assistant Professor, Pathology and Intelligent Systems, University of Pittsburgh and Michael J. Becich, MD, PhD, Professor of Pathology and Information Science & Telecommunications, and Director of Benedum Oncology Informatics Center and the Center for Pathology Informatics at the University of Pittsburgh.

There were 300 attendees comprised of pathologists, oncologists, radiologists, cancer registrars, consultants, pathology assistants, computer support personnel, lab managers and vendors.

Boot Camp consisted of introductory lectures to enhance attendee’s knowledge of informatics. Lectures relating to hardware, software, file formats, computer networking and system architecture, database digital imaging acquisition and processing, and digital imaging management and utilization were offered.

Two unique workshops were held: 1. Digital Imaging Standards in Pathology Working Group. This session provided salient background as to why an implementation of a DICOM compliant imaging system/server in practice may be desirable. This session began with an introduction to the DICOM standard with emphasis on the Visible Light Image Object Definition (IOD) and how it can be used in the setting of pathology. The steps needed to take a standard jpeg image and annotate it to become a valid DICOM object were reviewed. Also, current developments in the DICOM Visible Light Working Group were presented as a segue into a general discussion, which focused upon ways of encouraging pathologists and especially APLIS vendors to implement and support DICOM-compatible imaging solutions. The second was a Microarray Analysis Workshop, which was a half-day workshop that reviewed the performance of various statistical approaches for the analysis of data from microarray experiments. Some of the topics discussed were, review of microarray technology, data pre-processing, computational validation and more. Both workshops were well attended and will be offered again at APIII 2004.

Plenary sessions covered subjects relating to the Future of Pathology Informatics – Partnering with Oncology Informatics and Bioinformatics and Tissue Banking Informatics Challenges.

A series of 58 Scientific Sessions were held addressing recent advances and technical innovations in pathology informatics, oncology informatics and bioinformatics. Bruce Beckwith, MD, and team from Harvard Medical School were awarded “Best Scientific Session: Controlled Vocabularies, Decision Support and Outcomes Research” for their presentation “Automated Deidentification of Pathology Reports.” Betty Yee Man Cheng, BSc and team from Carnegie Mellon University were awarded “Best Scientific Session:
Bioinformatics and Data Mining” for their presentation “A Linguistic Approach to the Identification of Motifs and Pharmaceutical Classification of GPCRs.” Stephen Master, MD, PhD, from the Hospital of the University of Pennsylvania and team members from University of Pennsylvania School of Medicine, Abramson Family Cancer Research Institute and Children’s Hospital of Philadelphia were awarded “Best Scientific Session: Microarray and Tissue Array Analysis” for their presentation “Sensitive Detection of Gene Expression Changes Using Oligonucleotide Microarrays.” Alan Meeker, PhD, and team members from Johns Hopkins Hospital and Joe Zimmerman from Vision Multimedia Technologies were awarded “Awarded "Best Scientific Session: Telepathology, Digital Microscopy and Image Analysis" for their presentation “Improved Software for Quantitative Analysis of Fluorescence Microscopy Images.” Mark Routbort, MD, PhD and team from Duke University were awarded “Best Scientific Session: Pathology Informatics Applications” for their presentation “CAP Cancer Templates in Practice: A user-Friendly Software System for Cancer Report Entry, Transmission and Automated Snomed Encoding.”

Breakout Sessions were conducted ranging from Data Mining and Information Architecture for Pathology and Oncology Outcomes Research, information Hubs for Molecular Biology and Genetics, Informatics Challenges and Opportunities Abound in Proteome, New tools for Efficiency and Error Reduction in the Anatomic Pathology Lab, The Future of Telepathology, Cancer Registries: Integrating a Standardized Oncology Information Resource into the Informatics Spectrum, HIPAA Hoops and Hurdles, Online Resources for Cancer Patients: A Review of the Field with Guidelines for Developers, Informatics Program Design and Development, PCABC: A Novel Approach to Cancer Research and Care, The Evolution of Pathology Informatics Programs in Hospitals and Medical Schools, and PERL and PYTHON Programming Workshop.

A unique aspect to APIII is the e-poster presentations. All posters were presented directly from the Internet using high performance multimedia workstations. There were 58 Electronic Posters submitted. The winner of the Best Electronic Poster was Michael Davis, MS and team from the University of Pittsburgh for their presentation of “Clinical Trials Management: An Interactive Solution to Paper-Based Treatment Schedules for Oncology Clinical Trials.” The winner of the Best Departmental Web Site was Fauzia Khan, MD and team from Umass Memorial Health Care for their presentation of “Umassmemoriallabs.com; A Web-Based Tool That Continues to Evolve in Response to System and Departmental Needs”. There were two Electronic Poster Honorable Mentions. They were Satish Patel, MS, and team from the University of Pittsburgh for their presentation of “GEDA: A Gene Expression Data Analysis Suite” and Andrew Post, MD, MS and team from the University of Pittsburgh and Jonhan Ho, MD from Forum Health for their presentation “Web-Based Implementation of a Modular, General Purpose Temporal Abstraction Framework for Pattern Identification in Clinical Laboratory Data.”

Thirty corporations provided sponsorship to the conference. There were 22 exhibitors and the conference raised $11,000 from companies and APIII faculty to fund 11 CAP Foundation Informatics Awards, which helped to defray registration, travel and hotel costs for residents and fellows from US and Canadian training programs to attend the conference. See http://apiii.upmc.edu/travel/2003.html for a listing of the awardees.

All presentations were recorded and can be viewed at http://apiii.upmc.edu/live/index.html

Michael Becich, M.D., Ph.D.
Vice Chairman, Pathology Informatics

Meeting Announcement – Mark your Calendar
9th Annual Advancing Practice, Instruction, and Innovation Through Informatics (APIII 2004)
October, 6-8, 2004 – Marriott City Center, Pittsburgh, PA

James H. Harrison, Jr., MD, PhD and Michael J.
**BECHICH, MD, PHD – Course Directors.**

Educational conference provides a broad overview of applications of biomedical informatics in pathology and oncology practice, education, and research. A significant portion of the meeting will revolve around updates and project reports from the participants in all workspaces in the National Cancer Institute (NCI) Cancer biomedical Informatics Grid (caBIG). See [http://apiii.upmc.edu](http://apiii.upmc.edu) for complete program listing.

This conference is designed for academic and practicing pathologists and oncologists, researchers in biomedical informatics, residents, fellows, graduate students, computer support personnel and lab managers interested in learning how informatics impacts and transforms medical research and practice, especially but not limited to pathology and oncology. Prior informatics knowledge not required. Continuing Medical Education credits will be offered. All conference information can be accessed on the Internet at [http://apiii.upmc.edu](http://apiii.upmc.edu)

**SHADYSIDE HOSPITAL FOUNDATION OFFERS FUNDS TO ENHANCE PROGRAMS**

The Shadyside Hospital Foundation has invited UPMC Shadyside physicians, residents, nurses and administrators to submit proposals for funding that will enhance UPMC Shadyside programs for patient care, quality improvement, work redesign and service to the disadvantaged. Grant proposals were due March 26, 2004, to the Foundation office, Aiken Medical Building, 532 South Aiken Avenue, Suite 302. Proposals should be two pages and include a budget. Although too late to submit for this year, more information about grant opportunities can be made via [Laughlinpj@upmc.edu](mailto:Laughlinpj@upmc.edu).

The Shadyside Hospital Foundation Grant Committee and UPMC Shadyside administration review the proposals. Final approvals are made by the Shadyside Hospital Foundation Board of Directors in June. Funds are made available through the Shadyside Hospital Foundation and are not part of the Competitive Research Grant Application.

**SEMINAR SERIES**

**Wednesday, June 2, 2004**

12:00 noon, Room 1104 Scaife Hall

“Regulation of Papillogenesis in Ovarian Surface Epithelium”

**Santo V. Nicosia, M.D.**

Professor and Chairman

Department of Pathology

University of South Florida

Tampa, FL

**Wednesday, June 16, 2004**

12 noon, Room 1105 Scaife Hall

“Gene Expression Changes in Cardiac Hypertrophy”

**Jorge Sepulveda, M.D., Ph.D.**

Assistant Professor of Pathology

Department of Pathology

University of Pittsburgh

**Wednesday, June 30, 2004**

12:00 noon, Room 1105 B/C Scaife Hall

“Interface Between Parenchymal and Vascular Dementias – Pathophysiologic Mechanisms”

**Harry V. Vinters, M.D.**

Professor of Pathology and Lab Medicine

And Neurology

Chief, Section of Neuropathology

UCLA Medical Center

Los Angeles, CA

**GRANTS UPDATE**

Grants that have been awarded in the Department are
listed on the attached. Those not included in the list are below.

**Per Basse, Ph.D.**

R01CA104560: Cytokine delivery by tumor-seeking lymphocytes 3/1/04-2/28/07. NCI/NIH.

The deadline date for the next Pathology Newsletter is September 30. Please email newsworthy items to szalkuskict@upmc.edu. Thanks!

**New Faculty Members**

Rohit Bhargava, M.D. has been recruited to Magee Womens Hospital effective July 1 as an Assistant Professor. Dr. Bhargava is coming from Memorial Sloan-Kettering Cancer Center in NY where he completed a fellowship in Surgical Pathology and Molecular Pathology. His expertise is in gynecological and breast pathology. His research interest is in the area of investigating downstream tyrosine kinase activation by HER-2/neu.

Shirley C. Chen, M.D. will join Magee Womens Hospital effective July 1 as an Assistant Professor. Dr. Chen is coming from Memorial Sloan Kettering Cancer Center in NY where she is finishing a Gynecologic Oncology fellowship. Her research interest is in the area of investigating ovarian cancer.

Jennifer Christakis, AS, CTR - WEST Locations Effective 04/26/2004. Jennifer has 14 years of experience in Medical Record Department activities and has been a cancer registrar since 1992. Her hospital-based cancer registry experience took place in Wheeling Hospital (WV) and she has been an independent certified cancer registry consultant since 2002 living in OH. She is very excited about joining the team here at UPMC and the Cancer Centers.

Lishen Ge, Ph.D. will join the University of Pittsburgh Cancer Institute effective July 1 as an Instructor. Dr. Ge has trained at the University of Pittsburgh as a Postdoctoral Research Associate in Pathology and as an Instructor in Surgery. Her research interest is in exploring the role of TNF family molecules in dendritic cell and NK cell regulation of anticancer immunity.

Eric Lagasse, Ph.D. will join The McGowan Institute for Regenerative Medicine effective July 1 as an Associate Professor of Pathology. Dr. Lagasse is coming from Stem Cells Inc. in Palo Alto California where he was the Director of the Liver Stem Cell Discovery Program. He will work to establish a Cancer Stem Cell Center in collaboration with UPCI.

Guizhu Li, M.D. will join UPMC Passavant Hospital as a Clinical Assistant Professor effective July 1. Dr. Li is finishing a fellowship in Surgical Pathology at Hartford Hospital in Hartford CT.

Sara Monaghan, M.D. will join the Hematology Division of Presbyterian-University Hospital as an Assistant Professor of Pathology. Dr. Monaghan is coming from RUSH University Medical Center in Chicago, IL. She will have oversight responsibilities for the hematopathology laboratories and sign-out responsibility for peripheral blood and bone marrow specimens, lymph node and other hematopathology tissue specimens.

Anil V. Parwani, M.D. will join the Division of Pathology Informatics and Anatomic Pathology at Shadyside and split his time between the two divisions effective July 15, 2004. Dr. Parwani is finishing a GU fellowship at John Hopkins. He will cover the GU service at PUH and Shadyside, as well as work to establish AP related informatics support for clinical practice.
Brian Rosendale, M.D. will join Passavant’s Hospital as a Clinical Associate Professor July 1, 2004. Dr. Rosendale trained at UPMC Health Center completing a residency in Pathology in 1994 and a Cytopathology fellowship under Dr. Dusenbery in 1996. Since 1996, he has been an Associate Pathologist at Forbes Regional Hospital.

Daniel Sudilovsky, M.D. will join Shadyside’s Division of Pathology as an Associate Professor July 1, 2004. Dr. Sudilovsky is presently at the Marin Medical Laboratories in Novato, CA. He will serve at the Director of the Fine Needle Aspiration Clinical and Service at Shadyside and will coordinate the clinical and service activities of the Division of Cytology.

Linan Wang, M.D. will join the Surgical Pathology Division at PUH July 1. Dr. Wang is finishing a Surgical Pathology Fellowship at Mayo Clinic.

Mark H. Yazer, M.D. will join the Division of Transfusion Medicine July 1. Dr. Yazer will finish a Hematological Pathology Residency at the University of Alberta this spring. Dr Yazer will provide medical support and consultative support to the CBB and CTS Red Cell Reference Laboratory.

FACULTY and STAFF HIGHLIGHTS

Sheldon Bastacky, M.D.
Presentation “Patient with Monoclonal Gammapathy and Proteinuria” (at RenalPathology Society Satellite meeting) USCAP, March 4, 2004, Vancouver, British Columbia, as well as seven poster presentations with residents and faculty.

William Chambers, Ph.D.
Co-Chaired the "Antitumor Effector Cells, Mechanisms of Tumor Rejection and Modulation of Tumor Immunity" session at the 2004 FASEB meeting in Washington DC and made a presentation entitled "NK Cell:DC Interactions Enhance Lytic Function Against YAC-1 But Not Against Glioma Tumor Targets".

Yuan Chang, M.D.

Fiona E. Craig, M.D.
San Francisco Workshops for Laboratory Professionals, April 23, 2004 San Francisco, CA Hematology: Flow Cytometry.

Rebecca Crowley, M.D., M.S.

“A Cognitive Tutoring System for Visual Diagnostic Classification.” Vanderbilt University Department of Medical Informatics Seminar. Nashville TN, April 7, 2004

William Gross
CoPath SuperUsers meetings can be found on the APLIS web site in the SuperUsers corner. The agenda’s for the meetings are posted with links to documentation from the presentations. The CoPath SuperUsers meetings are held 3-4 times per year. The designated CoPath SuperUsers from all of the UPMC sites who use CoPath meet to learn about upcoming new features of CoPath and to discuss CoPath issues that affect CoPath users across the health system.

Training news for Pathology Informatics - recently updated the CoPath Plus userguide and the updated information is also posted on the APLIS web site under the link for CoPath Plus Userguide.
http://aplis.upmc.edu All of this training documentation is also available in Audio/video format on the APLIS web site under the link for CoPath Plus Web Based
Training.
John Milnes, Patrick Phillips along with Lisa Devine have been working on a training database that will include functionality to allow users to sign up for classes on-line via a link placed on the APLIS web site. That part is not quite ready yet. However, another piece of this project is to allow trainees to fill out their training evaluations on-line, anonymously, at the end of each training session. This piece will be rolled out starting Monday 4/19/04 with the beginning of the CoPath training at UPMC Passavant.

Dilip Gupta, M.D.
“Development of a Voluntary Reporting & Anatomic Pathology Error Database for Patient Safety.”
American Society of Cytopathologists Meeting.
Platform Presentation, November, 2003, Orlando,FL.


Jeffrey Kant, M.D., Ph.D.
Honored at February 27, 2004 University of Pittsburgh Honors Convocation for election as Fellow of the American Association for the Advancement of Science in recognition of "distinguished leadership in the development of molecular diagnostics as a clinical discipline within the field of pathology."

Pathology Ground Rounds, Weill Cornell Medical College, New York, NY, April 5, 2004 - "The Pathologist as Gatekeeper and Interpreter of Genetic Testing."

Pathology Grand Rounds, M.D. Anderson Cancer Center, Houston, TX, April 23, 2004 - "Molecular Testing for Hereditary Paraganglioma."

Kelly Kitterly, RHIT, CTR - NORTH Locations, effective 04/19/2004 Kelly has worked at UPMC Passavant in the Medical Record Department for 22 years and has been a cancer registrar in UPMC Passavant's hospital-based registry for over 12 of those years. We are happy to have her join us to expand the Network Registry to the Community Locations!

Shih-Fan Kuan, M.D. Presented“Serrated adenomas and admixed hyperplastic-adenomatous polyps follow different oncogenic pathways.”at the 93rd Annual Meeting of USCAP, March 8, 2004 Vancouver, BC, Canada

Mengfeng Li, Ph.D.

James Lyons-Weiler, Ph.D.
Dr. Lyons-Weiler was appointed Associate Editor of Applied Bioinformatics in 2003.

Kimberlie Marks
April 18, 2004 promotion of Kimberlie (Kim) Marks, RHIA, CTR to the newly created role of Manager of Clinical Registry Information Services. Kim was previously a Lead Cancer Registry Specialist at UPMC Presbyterian Shadyside.

In her new role, Kim will directly manage the staff and activities of the UPMC Braddock (effective 7/1/04) UPMC Lee Regional/John P. Murtha Pavilion, UPMC Presbyterian Shadyside and UPMC South Side registries (exclusive of the disease specific positions).

Additionally, Kim will work on all other activities related to UPMC Network Registry facilities and UPMC Cancer Center Community locations (our expansion project, PA Department of Health, vendor relations and numerous other responsibilities.

George K. Michalopoulos, M.D., Ph.D.
“HGF and Liver Regeneration and Tissue Assembly,”
Presentation, Pitt-INSERM, Science and Technology


“Hepatocyte Growth Factor in Liver Regeneration and Tissue Assembly, National Institute of Environmental Health Sciences Center, Sealy Center for Environmental Health and Medicine, The University of Texas Medical Branch, Galveston, TX, April 5, 2004.

Parmjeet Randhawa, M.D.
Joint Seminar presentation “The Expanding Spectrum of Polyomavirus Infections,” for Departments of Infectious Disease, Molecular Microbiology and Immunology and Department of Microbiology and Immunology, Johns Hopkins Bloomberg School of Public Health, Johns Hopkins University Baltimore Maryland, September 11, 2003.


Michael Shurin, M.D., Ph.D.
Invited lecturer “Molecular regulation of the dendritic cell system in cancer” Ben Gurion University, Beer Sheva, Israel, April 2004

Steven Swerdlow, M.D.
Dr. Swerdlow recently became President of the 600 plus member Society for Hematopathology.

Dr. Swerdlow attended the World Health Organization Workshop on cutaneous B-cell lymphoma in Zurich, Switzerland on January 15-17, 2004 as an invited participant.

Cary Wu, Ph.D. presented “Protein complexes that link focal adhesions to the actin cytoskeleton: a tale of two LIMs” as an invited speaker in the “Signaling by Adhesion Receptors” Gordon Research Conference Bristol, Rhode Island, June 20-25, 2004

Excellence in Education Nominee --Samuel Yousem, M.D.
The School of Medicine Curriculum Committee representatives for the classes of 2006 and 2007, have nominated Dr. Yousem for an Excellence in Education Award. The Excellence in Education Awards are presented by the student body to those faculty who have shown true dedication to the art of teaching and superior skill in the practice of that art. This year, students are being asked to choose one Course Director, Lecturer, Small Group Facilitator, and Mentor to receive an award. Simply being nominated indicates that Dr. Yousem has performed his duties with such skill as to have made a lasting impression on the medical student body. Congratulations!

Yukako Yagi
"Web-casting pathology department conferences in a geographically distributed medical center" was accepted by Human Pathology (will be published within several months)

Xiao-Ming Yin, M.D., Ph.D.
Presented “Cross talk between death receptors and mitochondria-pathway of apoptosis” at the Annual meeting of American Association for the Study of Liver Diseases, Research workshop on apoptosis. October 26, 2003, Boston, MA.

Presented “Constructing a new paradigm in apoptosis,
from the death receptors to the mitochondria”
Department of Anatomy and Cell Biology, Medical
College of Georgia, November 4, 2003, Augusta, GA.

Presented “An orchestrated activation of multiple
mitochondrial apoptotic events by Bid” Keystone
Symposium on Apoptosis in Biochemistry and
Structural Biology. February 5, 2003, Keystone, CO.

**Farewell to:**

**K.N. Rao, Ph.D.** will retire June 30, 2004 after 31
years at the University of Pittsburgh. Dr. Rao’s career
at the University was one in which he could recount
many significant scientific and historical events in the
Department dating back to the days when Professors
Totten and Fetterman were on the staff. He has had a
successful research career while also fulfilling his
responsibilities in the Clinical Chemistry Lab. More
recently, he Chaired the Research Day Committee for
the Department. He will retire to his home in Bethel
Park, PA and have more time to dote on his
grandchildren. We wish him good luck and many more
happy years enjoying his retirement life.

**Karen Weck, M.D.**

We wish Dr. Weck good luck as she embarks on a new
opportunity as Director of the Molecular Genetics
Laboratory at the University of North Carolina e April 2.

**PUBLICATIONS**

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Yi, X., X.-M. Yin, and Z. Dong. Inhibition of Bid-
induced apoptosis by Bcl-2: tBid insertion, Bax
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Wang X, Ryter SW, Dai C, Tang ZL, Watkins SC, Yin
X.-M, Song R, Choi AM. Necrotic cell death in
response to oxidant stress involves the activation of the
apoptogenic caspase-8/bid pathway. J. Biol

Zhao, Y. Zhao, W.-X. Ding, T. Qian, D. K. Kuharsky,
S. Watkin, J. J. Lemasters and X.-M. Yin. Dissection
of Bid-mediated mitochondrial events in primary
hepatocytes following death receptor activation,

Seo, Y-W., J. Shin, K. H. Ko, J. H Cha, J. J. Park, B.
R. Lee, C.-w. Yun, Y. M. Kim, D.-w. Seol, D-w. Kim,
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induced mitochondrial dysfunction: Bak-oligomerization
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To die or not to die for neurons in ischemia, traumatic
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McHale T, Bastacky S. Renal lymphoma,


Hassan A, Yerian LM, Kuan SF, Xiao SY, Hart J, Wang HL. Immunohistochemical evaluation of APC, β-catenin, c-Myc, cyclin D1, P53, and retinoblastoma protein expression in syndromic and sporadic fundic gland polyps.: Human Pathology,