Citius, Altius, Fortius
Faster, Higher, Stronger: Olympic Motto

By Michael R. O’Leary, M.D., CEO

And so, another summer Olympic Games is history, and now begins the speculation about whether the games were tainted by performance-enhancing drugs, also known as “doping.” Widespread public knowledge of doping goes back only a decade. The 1998 Olympic 100-meter final, known as “the dirtiest race in history,” outraged many since six of the first eight finishers were later implicated in doping.

However, doping has been a part of top-level sports for more than a century! It was a combination of brandy and strychnine, for example that powered Thomas Hicks to victory in the 1904 Olympic marathon, though authorities took no notice at that time. Over the last several decades, a cat-and-mouse game evolved, pitting the testers against the cheaters.

Testers see things in stark terms: positive or negative, clean or cheating. Cheaters see far more shades of gray, and are willing to offer themselves up as testing grounds for the latest and greatest drugs and treatments, in the hope of incremental gains in performance.

Traditional anti-doping testing looks for direct evidence of banned substances: the presence of forbidden substance. This kind of testing suffers from many false negatives due to 1) banned substances present but at a concentration below detection level and 2) the ever-increasing list of new designer substances – a case of “you can’t find them if you don’t test for them”!

Blood Doping

Blood doping refers to any method that aims to increase red blood cell mass and enhance oxygen transport capacity, thereby increasing endurance and performance. Blood doping techniques may directly affect the endogenous production of red blood cells through erythropoiesis-stimulating agents or indirectly through homologous and/or autologous blood transfusions.

At the end of the 1990s, some sports authorities added the measurement of biological markers of altered erythropoiesis (e.g. hemoglobin, hematocrit, reticulocyte count) to their anti-doping testing regimens. The introduction of comprehensive blood exams in sports combined the objectives of 1) protecting the health of athletes and 2) deterring the abuse of recombinant erythropoietin (rEPO), which was undetectable by a drug test at that time.

The International Association of Athletics Federations (IAAF), the international governing body for athletes, introduced a blood-testing program in 2001 for the world’s top-level track and field athletes. Since then, the use of biomarkers to detect doping has matured into the Athlete Biological Passport (ABP) paradigm.

Athlete Biological Passport

In contrast to the rationale behind traditional drug tests, the fundamental principle of the ABP is that monitoring selected biomarkers over time can reveal the effects of doping. Repeated assessment over time (e.g. pre-race, race, after-race) of some very conventional hematological parameters will establish a highly specific profile of an athlete, which will remain fairly stable over time, in the absence of sickness or unfair practices.

The United States Anti-Doping Agency (USADA) has adopted the ABP in an effort to preserve the integrity of the sports that it oversees. It has stated that “we hold the public trust to preserve the value and integrity of athletic competition through just initiatives that prevent, deter and detect violations of true sport.”

Recently, it released a blistering report accusing seven-time Tour de France champion Lance Armstrong of being at the center of a “massive team doping scheme,” alleging widespread team use of erythropoietin. Armstrong’s argument has been that he has passed hundreds of drug tests. The recent availability of doping substances identical to those naturally produced by the human body demonstrates the limitation of traditional drug testing programs to ensure fairness in elite sports.

In contrast to a drug test that provides a result for a precise moment in time, the ABP represents a new paradigm in detection of doping-triggered physiological changes that will allow athletes to objectively demonstrate they will compete in an unaltered condition, clear of any doping suspicion.
Blood Loss Study Recognized at National Conference

A Blood Loss Study developed by a team from Crouse Hospital and Pathology Associates of Syracuse, one of our affiliated pathology practices, earned second place recognition at the annual Society for the Advancement of Blood Management conference held Sept. 20-22 in Pittsburgh.

The study was a team effort headed by (pictured, left to right) Director of Laboratories Rachel Elder, M.D., medical advisor of transfusion services at both Laboratory Alliance and Crouse Hospital, and included Blood Utilization and Safety Officer Ursula Pedersen and Phlebotomy Supervisor Sue LeRoy. The large poster is on display at Crouse Hospital just past the main lobby across from Admissions and near the Emergency Department entrance.

The abstract, poster and presentation, titled “Blood Loss Through Laboratory Testing (BLLT) Study,” has generated significant interest in the blood management community.

“We look forward to continued assistance in the development and implementation of strategies for improvement, not only in limiting unnecessary blood loss through testing, but also in the other areas that were identified which will all lead to a higher level of patient care and patient satisfaction.”

New Patient Service Center Opened in Cazenovia

Laboratory Alliance recently celebrated the opening of a new patient service center in Cazenovia at 132½ Albany St., in the Atwell Mill Professional Building.

The new Madison County location is one of 11 patient service centers in Central New York open to the public for laboratory test draws ordered by health care providers.

Hours and directions to the Center are detailed in the ad below. Experienced professional phlebotomists are always on hand and the company’s couriers transport lab specimens to the main laboratory in Liverpool, N.Y.

For more information about all of our patient service centers, directions, maps and our laboratory test menu, visit laboratoryalliance.com or call our Customer Service Department at (315) 461-3008.

When you need lab tests, visit us in Cazenovia

Welcome New Clients

SJH Cardiology Associates
East Syracuse, N.Y.

Associated Medical Professionals of New York
Cortland, N.Y.

Samuel B. Rameas, DPM
FootCare Podiatry
Syracuse, N.Y.

Spotlight on Vitamin D: More Good News

Another case for taking vitamin D. High dose vitamin D can accelerate the recovery of patients with tuberculosis, according to a new study.

Tuberculosis infected 9 million people around the world in 2010, killing nearly 1.5 million of those infected, according to the Vitamin D Council. Drug-resistant tuberculosis rates have been increasing throughout the world, prompting an increase in research for new, effective treatments.

A study by British researchers recently published in Proceedings of the National Academy of Sciences, gave half of a group of 95 tuberculosis patients who were on standard antibiotic treatment a high dose of vitamin D, while the others received a placebo. They found that a number of the measured inflammatory markers fell further and faster among patients taking vitamin D. They also found that the bacteria that causes TB was undetectable under the microscope in 23 days for those taking vitamin D, as compared to 36 days among participants taking placebo.

News of the study was published worldwide in health and general consumer news sources. Research looking at larger populations will need to be conducted before clinical recommendations can be made.

Scientists said inspiration for the study was that 19th-century tuberculosis patients were sent to the mountains to lie in the sun. Ultraviolet B rays in sunshine convert cholesterol in the skin into vitamin D. Decades before antibiotics, doctors knew that TB patients sometimes recovered, or at least lived longer, at high altitudes. Vitamin D seems to prevent lung damage by slowing down inflammatory responses to the TB bacterium. Since it does not interfere with the action of antibiotics, it may be useful in other illnesses, like pneumonia, according to authors of the study.
New Testing Service for Influenza Viruses at Hospital Labs
By Paul A. Granato, Ph.D., Director of Microbiology

With the winter season approaching, the incidence of human respiratory tract infections, particularly those caused by viruses, will increase significantly. Common cold viruses account for most of these respiratory illnesses but other respiratory viruses, particularly the influenza viruses, generally receive the most widespread attention because of their potential to cause serious, life-threatening disease and epidemic infections.

Within the last 10 to 15 years, very effective antiviral therapies have been developed for the treatment of influenza infections. A major limitation in the use of these anti-influenza virus therapies is that they must be administered within the first 48 hours of onset of symptoms to be effective. As such, laboratory tests must be available that provide for the rapid and reliable diagnosis of influenza respiratory infections within this 48 hour time period of therapeutic efficacy.

In an effort to comply with this therapeutic need, Laboratory Alliance’s Microbiology Department is pleased to announce the availability of a new influenza virus testing service at each of its Rapid Response Laboratories (RRLs) located at St. Joseph’s Hospital, Crouse Hospital, and University Hospital at Community General.

This gene amplification test is a multiplex PCR assay that detects the presence of seasonal influenza A, influenza A H1N1 (also known as the swine flu), and influenza B from nasopharyngeal specimens. This is the same gene amplification assay that has been used at our Microbiology Laboratory located at our Operations Center since December of 2011. The advantage of using this multiplex PCR test at each of our hospital’s RRLs is that because the test has a sensitivity of greater than 99%, negative test results need not be reflexed for additional testing.

Previously, a less sensitive enzyme immunoassay (EIA) test was used at our RRLs that required adherence to a time-consuming protocol of reflex testing of “EIA negative” specimens to our Operations Center microbiology laboratory for confirmatory PCR testing.

Importantly, clinical decisions regarding the administration of appropriate therapy can now be made at our hospital and emergency room sites on the basis of this final PCR test result which is available within 70 to 75 minutes of specimen receipt at the RRLs. This new influenza testing service will be available 24 hours per day at each of our RRLs allowing for a highly sensitive, confirmatory final result in a shorter period of time resulting in improved care of hospitalized and emergency room patients.

In brief review, influenza, otherwise known as the “flu,” is an acute, contagious respiratory illness caused by influenza A, B, and C viruses. Of these, only influenza A and B are thought to cause significant human disease, with influenza B infections usually being milder than infections caused by influenza A. Common symptoms of influenza infection include fever, chills, sore throat, muscle pains, severe headache, weakness/fatigue, and a nonproductive cough. A highly reliable and confirmatory multiplex PCR assay is now offered at each of Laboratory Alliance’s three hospital RRLs allowing for the rapid diagnosis and appropriate therapeutic management of hospitalized patients and individuals who visit the hospitals’ emergency rooms.

United Way Poster Features Employees

More than 50 Laboratory Alliance employees took part in the development of the United Way poster launching the 2012 campaign -- and even more are participating as contributors to this important community fundraising event.

“The United Way Campaign is off to a great start,” said Laboratory Alliance’s United Way Campaign Coordinator Marsha Herbst, human resources assistant at the Corporate Offices. “We have collected $30,094 and have exceeded last year’s total and we are still not finished with the campaign.”
New Women’s Health Panel for Sexually Transmitted Diseases

By Paul A. Granato, Ph.D., Director of Microbiology

*Chlamydia trachomatis*, *Neisseria gonorrhoeae*, and *Trichomonas vaginalis* are common causes of sexually transmitted disease (STD) in the United States and throughout the world. In women, *C. trachomatis* and *N. gonorrhoeae* are the leading bacterial causes of cervicitis in which infected patients may be at risk for systemic complications of pelvic inflammatory disease, septicemia, septic arthritis, and salpingitis. Most women infected with *C. trachomatis* and/or *N. gonorrhoeae* are asymptomatic for disease.

*Trichomonas vaginalis*, a protozoan, can cause vaginitis, cervicitis, or urethritis. Complications of *Trichomonas* genital infection can include premature labor, low-birth-weight offspring, premature rupture of membranes, and post-abortion or post-hysterectomy infection. An association with pelvic inflammatory disease, tubal infertility, and cervical cancer with previous episodes of trichomoniasis has been reported. Symptomatic women with trichomoniasis usually complain of vaginal discharge, vulvovaginal soreness, and/or irritation. Dysuria is also common. However, it has been estimated that 10% to 50% of *T. vaginalis* infections in women are asymptomatic, and in men, the proportion may even be higher.

Given the systemic complications that can result from localized chlamydial, gonococcal or trichomonal genital infection, highly sensitive and reliable tests are needed for diagnosis. Although cultural methods may be used to diagnose these infections, they can be highly insensitive, cumbersome, and time-consuming. As such, for the last 15 years, molecular-based methods or gene amplification tests are now used in most clinical microbiology laboratories for the detection of *C. trachomatis* and *N. gonorrhoeae* in urogenital specimens.

One such amplification test is the APTIMA Chlamydia/GC combination test that Laboratory Alliance's Microbiology Department has been using for over a decade. The APTIMA test combines the technologies of target capture, transcription-mediated amplification, and hybridization protection assay. This technology represents one of the most sensitive and specific methods for the detection of *C. trachomatis* and *N. gonorrhoeae* in urogenital specimens.

Recently, the APTIMA assay has been approved for use for detecting *T. vaginalis* in vaginal specimens using the same APTIMA specimen collector that is used for *C. trachomatis* and *N. gonorrhoeae* testing. Culture was formerly regarded as the best laboratory method for detecting *T. vaginalis* in clinical specimens. However, laboratory evaluations of the APTIMA *Trichomonas vaginalis* assay compared to culture showed that culture had, at best, an 82% sensitivity. As such, the use of the APTIMA *Trichomonas vaginalis* assay will result in a significant improvement in the detection of infections.

Healthcare providers will now have the opportunity to order the APTIMA *Trichomonas vaginalis* test as part of the APTIMA Chlamydia/GC Test combo by using the APTIMA Swab Specimen Collection Device. This single specimen can then be used for the detection of *C. trachomatis*, *N. gonorrhoeae*, and *T. vaginalis* in cervical/vaginal specimens by using one of the most highly sensitive and specific gene amplification assays available.

The *T. vaginalis* assay may also be ordered as an individual test. Providers may continue to order the AFFIRM test which screens for *Gardnerella vaginalis*, the major cause of bacterial vaginosis, and *Candida* species, the fungal agent responsible for vaginal moniliasis, by using the AFFIRM specimen collector provided by the laboratory.

Rapid Molecular-Based Test for Characterizing *Staphylococci* Recovered from Blood Cultures

By Paul A. Granato, Ph.D., Director of Microbiology

Life-threatening cases of septicemia, caused by the presence of microorganisms in a patient’s blood, is a medical emergency and urgent healthcare concern with over 750,000 documented cases occurring annually in the United States. The mortality rate associated with severe sepsis has been reported as high as 50%.

Methicillin-susceptible *Staphylococcus aureus* (MSSA) and methicillin-resistant *Staphylococcus aureus* (MRSA) may account for up to 35% of patients with septicemia. As such, the early detection and characterization of staphylococci in blood may be critical in the selection of appropriate antimicrobial therapy which, in some cases, can be life saving.

Laboratory Alliance’s Microbiology Department is pleased to announce the availability of a new molecular-based, microarray probe assay that can reliably and rapidly detect and distinguish *Staphylococcus aureus* from coagulase negative staphylococci in blood cultures. In addition, the assay can detect the presence or absence of the mecA gene in *S. aureus*, which is a predictor of the organism’s likelihood resistance or susceptibility to methicillin/oxacillin. Test results are available within 2.5 hours after the detection of “gram-positive cocci suggestive of staphylococci” in a patient’s blood culture. The availability of this rapid and reliable microarray probe result is 1 to 2 days sooner than using conventional test methods. In the absence of such timely results, clinicians may often have to employ empiric treatment approaches, using more broad-spectrum antimicrobial therapies, that can be costly, ineffective, and contribute to an increase in drug resistance.

This new molecular-based probe assay employs the use of a small instrument platform and a test cartridge that allows for the automated performance of the assay in 2.5 hours. The assay is based upon the proprietary use of small, gold particles, called nanoparticles, which are coated with probe molecules that are complimentary for the capture or hybridization of a specific target nucleic acid in the blood specimen. This hybridization reaction is then detected by the instrument as “positive” for the presence of that molecular target in the blood. In the near future, the use of this assay will be expanded to detect over 12 species of gram-positive bacteria and three different antibiotic resistant determinants directly from blood cultures once our internal laboratory validation of the assay is complete.

The Microbiology Department has conducted a thorough, in-house validation of the microarray probe assay and obtained 100% correlation compared to conventional methods for the detection of MSSA, MRSA, and coagulase negative staphylococci. It is expected that the rapid availability of such reliable results 24 hours a day, seven days a week, will guide the choice of appropriate anti-staphylococcal therapy, when indicated, and have an enormously beneficial impact on patient care and patient outcomes.
Fall 2012

A spike in West Nile virus infections in the U.S. this summer has put a strain on the nation's laboratory testing capabilities, and this is compounded by a bigger issue – the shortage of lab techs – according to a recent article posted on NBCNews.com.

At least 2,636 cases and 118 deaths were caused by West Nile virus by mid-September, according to the Centers for Disease Control and Prevention, the most serious outbreak since the mosquito-borne virus was detected in the U.S. in 1999.

While experts said no one was denied care because of lab test delays, the shortage of lab techs to handle West Nile demand highlights a larger issue, according to Irina Lutinger, senior administrative director for NYU’s Langone Medical Center and a spokeswoman for the American Society for Clinical Pathology (ASCP).

The following facts are presented by Lutinger:

• In the U.S., about 11,000 new lab workers are needed every year, but only 6,000 are graduating. As older workers, call laboratorians, retire and fewer newcomers fill the slots, the vacancy rates in the field are growing.

• By 2018, if more students and second careerists are not recruited to become laboratory professionals, the shortage could be as high as 18 percent in areas such as blood banking.

• About 70 percent of doctors’ decisions are based on the outcome of lab analysis.

• At a time of critical importance of providing diagnosis and test results to arm these physicians with these results, we frequently face the challenges of being unable to have trained technologists.

The challenge for increasing recruitment could involve creating greater awareness of this currently low-profile profession.

“If the projections of the ASCP are correct and this continues to be a problem for the next several years, the situation of public health labs being in a good position could change,” said Kelly Wroblewski, director of infectious disease programs for the Association of Public Health Laboratories.

NBCNews.com article by JoNel Aleccia

Information about lab tech degree programs is available from the American Society of Clinical Pathology at ascp.org and click on “Careers” or at laboratorytechnician.org.

Centerstate CEO Ambassadors Visit our Madison Irving Patient Service Center

Laboratory Alliance’s patient service center in the Madison Irving Medical Center received a visit from Centerstate CEO volunteer ambassadors on Oct. 1, welcoming the new patient service center to the business community and recognizing Laboratory Alliance’s growth and success.

The center at 475 Irving Ave. in Syracuse is convenient to the hospitals and Syracuse University. Located on the first floor in Suite 100, it is open from 8 a.m. to 4:30 p.m. Monday through Friday, closed for lunch from 12:15 to 1 p.m.

Each of Laboratory Alliance’s patient service centers is open to the public for laboratory tests ordered by health care providers. Appointments are not necessary and most medical insurance plans are accepted.

The Madison Irving Medical Center is located across the street from Syracuse Stage and on the same block as Phoebe’s Restaurant, on the corners of Madison Street and Irving Avenue. The Crouse Hospital shuttle stops at the center’s front door and the building’s indoor parking garage offers reasonable parking rates and is handicapped accessible.
Dr. O’Leary Honored by Medical Society

CEO Michael R. O’Leary, M.D. was honored at the Onondaga County Medical Society’s Annual Awards presentation held at the organization’s Nov. 8 dinner meeting. Dr. O’Leary received the Award for Service to the Medical Society, Medicine, and the Community.

“As a busy medical executive, you have always found time to be a volunteer leader in many local organizations,” said outgoing OCMS President Dr. David T. Page. “You and your wife, Colleen E. O’Leary, M.D., are widely recognized for your continued support of many worthy causes. The Doctors O’Leary are exemplar role models for young physicians who want to give back to the community as you have done throughout your careers.”

Dr. Granato Named Clinical Professor Emeritus

Director of Microbiology Paul A. Granato, Ph.D. received notice from SUNY Upstate Medical University President David R. Smith, MD, that he has been appointed Clinical Professor Emeritus in the Department of Pathology effective Oct. 1.

“This recognition is a very high professional honor,” said Dr. Granato. “I personally wish to thank Dr. Robert Corona, Chair, Department of Pathology at Upstate Medical University, and my colleagues at Laboratory Alliance for their efforts in endorsing and supporting my nomination for this prestigious appointment”.

Golf Season’s Grand Finale

Jeff Peterson, Mark Adkins, golf pro Joel Deeter, Dr. O’Leary and Dr. Granato, from left, golfed in the Towsley Pro-Am held June 15 at Shenendoah Golf Club at Turning Stone Resort & Casino. The event raised funds for the Foundation for Upstate Medical University.

The annual Courier Golf Outing below was held on the morning of our company clambake on Saturday, Sept. 8, at the Arrowhead Golf Course in East Syracuse. A great time was had by all who participated, which included, from left, Lou Manzietti, Jr., Bob Fiesinger, Mike Galeazzi, Sam Martino, Jr., Ron LaRose, Gene Cusano, Sales Representative Melissa Belfield, Jerry Gavenda, Kevin McKown, Jean Amidon, Fred David, Jeff Piscitell and Sales Representative Gary Stelter.
New Employees
Please welcome our new employees

At our Corporate Office
Jane Hadden - Information Systems Analyst

At our Operations Center
Daniel Campbell - Laboratory Office Assistant
John Civiok - Courier
Irene Kiner - Medical Technologist
Margaret Light - Phlebotomist
Allen Phillips - Technical Processing Assistant
Wendy Radney - Phlebotomist

At our Rapid Response Laboratory at Crouse Hospital
Kristiana Giang - Laboratory Office Assistant
Brittany McAlpine - Laboratory Office Assistant
Tara Olin - Laboratory Office Assistant

At our Rapid Response Laboratory at Upstate University Hospital at Community General
Jenna Calcagnino - Laboratory Office Assistant

Employee Anniversaries

October, 5 years:
Ryan Adams
Kristyn Bowman
Lynn Chase
Jonathan McCabe

November, 5 years:
Amy Dishaw
Vicki Nolan
Stephanie Sokolowski

December, 5 years:
Beth Blair
Lori Fullam

October, 10 years:
Sally Sayed Ahmed

November, 10 years:
Ann Marie Derecola
Galal Galal
Karen Karogladian
Deborah Weller

You're Invited
Approaching his second anniversary with Laboratory Alliance, Dan Tiff, third from left, has made a great impression on his colleagues in the Facilities Department and at the Operations Center, who nominated him as CHAMP. Dan is joined by Senior Vice President Anne Marie Mullin, CEO Dr. O’Leary and Facilities Manager Jeff Peterson.

Dan is a lead engineer with more than 16 years experience as a facilities maintenance technician and extensive experience in HVAC, plumbing and electrical work.

“Dan has been an asset to our company since he started in 2010,” said Facilities Manager Jeff Peterson. “Dan is very dedicated and responsible in his day to day work. He's well respected with his co-workers and has a good rapport with vendors and contractors.”

Employees Generously Support Francis House Fundraiser

Laboratory Alliance employees raised the ante and collected $1,150 for Francis House as part of the not-for-profit’s “No Place Like Home” raffle fundraiser, exceeding last year's total by more than one hundred dollars.

Francis House is located on the north side of Syracuse and provides a home and an extended family to people with terminal illnesses so they can die with dignity.
Abstracts Presented at Molecular Pathology Meeting

Director of Microbiology Paul Granato, Ph.D., presented abstracts at the Association for Molecular Pathology’s 2012 Annual Meeting on Genomic Medicine, held Oct. 25-27 in Long Beach, Calif.

Device Trials Specialist Brenda Alkins, MS,MT(ASCP), participated in the research and in compiling data on behalf of the studies.

One study is titled “Evaluation of a Novel Real-Time Multiplexed Molecular Assay for the Detection of Respiratory Syncytial Virus and Human Metapneumovirus in Clinical Specimens.”

“The results of this study showed that the multiplex PCR assay was superior to established methods for the laboratory diagnosis of human metapneumovirus and respiratory syncytial virus directly in clinical specimens within 70 minutes specimen receipt,” said Dr. Granato

The second abstract, “Evaluation of the Quidel AmpliVue® C. difficile Assay for Qualitative Detection of Toxigenic Clostridium difficile Compared to Cell Culture Cytotoxicity Neutralization and Xpert® C. Difficile Assays,” is a new molecular PCR assay for Clostridium difficile, explains Dr. Granato. “It provides an alternative laboratory method for the highly reliable diagnosis of infection, usually within 90 minutes of specimen receipt, that is easy to perform and is affordable for most clinical microbiology laboratories.”

Technology Corner

The following new tests and test methods have been added to the menu of tests performed by Laboratory Alliance:

- Keppra (R) (Levetiracetam)
- Lamictal (R) (Lamotrigine)

The following test has had a change in methodology:

- Herpes Simplex IgG Typing by Multiplex Bead Flow Immunoassay

Please note that our most current laboratory test menu and other important information can be found on our website at laboratoryalliance.com.