



The Amos Family

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Sidone Lawrence
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Patient Care Coordinator

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Administrative Secretary/RDA II

This was supposed to be an article about vasculitis. But it is really a story about an extraordinary family: about their triumph over vasculitis and their commitment to helping others with this disease. Let me introduce you to the Amos family, one by one.

Courtney Amos, an exercise enthusiast and standout runner, had enjoyed vibrant health until late 1996 when, as a college sophomore, she developed fatigue, fever, weight loss, and pain in her back and arms. Some months and many x-rays and blood tests later, Courtney's perplexing illness was given a rather frightening name: **Takayasu's arteritis** [see Box, page 3]. After two years of incomplete responses to treatments, Courtney came to the Johns Hopkins Vasculitis Center.



Left to right: Daniel Paul Amos II, Dr. David Hellmann, and Courtney Amos

I remember vividly the first time we met. Despite her illness and her youth – she was only 22 – Courtney was dynamic, poised, focused, and, above all, determined to recapture her health and lead a normal life. For Courtney, a normal life meant pursuing her own career; supporting her new husband; and starting a family. In the face of her serious illness and its potential implications for her dreams, she remained resolute.

After that first visit, I understood the basis of her strength – the unstinting love and support of her entire family, particularly her parents, William and Valerie Goodwin, and her husband, Paul Amos. Paul's calm, steady demeanor and his ability to juggle competing facets of his life were striking. As he helped

his wife cope effectively with her disease, its treatment, and a possibly uncertain future, he managed to pursue degrees in both business and law at the same time.

With some adjustments in her treatment regimen and the critical addition of a new medication (mycophenolate mofetil [Cellcept]), Courtney's Takayasu's arteritis

The Amos Family (Continued)

(Continued from page 1)

went into remission and stayed there. We were able to taper her much-hated steroids. She resumed regular exercise and began to work in real estate in Atlanta. Though heartened by her progress, Courtney wanted more. Her fondest hope was to become a mother.

Takayasu's, with its inflammation of large blood vessels and many systemic symptoms, poses a sizeable physiologic challenge even for women who are not pregnant. On one hand, pregnancy is associated with substantial weight gain, a major increase in blood volume, and the sudden need of the mother's cardiovascular system to support two circulations rather than just one. On the other hand, I knew that with her disease now quiet, there might not be a better time. After tapering her medicines, Courtney became pregnant. Nine months later, after many prayers and amid audible sighs of relief, a healthy Daniel Paul Amos II was born on July 23, 2002.

What I had not learned at my first meeting with Courtney is that her father-in-law, also Daniel Paul Amos, is the Chairman and CEO of the American Family Life Assurance Company (AFLAC). AFLAC is best known to the public at large for its amusing commercials that feature an "AFLAC!" quacking duck. AFLAC, which insures 40 million people world-wide, is listed prominently at or near the top in polls on "The Best Companies", "The Best Companies to Work For", and "The Best Companies for Minorities". A few weeks after Baby Dan was born, Mr. Amos called to thank me for helping to shepherd Courtney through her pregnancy. Although Mr. Amos and I had not spoken before, he was so friendly, energetic, and engaging that we established an immediate rapport. As we closed our telephone conversation, he told me: "Now remember, Dave, if you ever need any help, put me at the top of the list of people you call".

Six months later, I needed his help. A marvelous opportunity had presented itself to the Vasculitis Center and to Johns Hopkins Bayview in the form of a collaboration established by Dr. John Stone with National Cancer Institute investigators. The research, in a new field of science called "proteomics", had shown remarkable potential for application in vasculitis. To shift this research into high gear, we needed our own proteomics facility at Johns Hopkins Bayview. To spearhead the proteomics effort, we were attempting to recruit one of the leading scientists in the field, Canada's

Dr. Jennifer Van Eyk. To accomplish the recruitment, we needed to purchase top-flight equipment. And for that, we needed money. I flew to Columbus, Georgia to present the opportunity to Mr. Amos.

During our conversation over a lunch of Georgia-style barbecue, Mr. Amos' love for his daughter-in-law, son, and grandson became obvious. Modestly and graciously, he allowed that although he knew little about the specific scientific issues I raised, if establishing a proteomics facility at Johns Hopkins Bayview would help us bring help to others, then that was all he really needed to know. As I boarded the plane back to Baltimore, my cell phone rang. It was Courtney, announcing that Mr. Amos had committed \$1 million to establish the Courtney Amos Proteomics Research Fund and to launch our recruitment effort. This summer, Dr. Van Eyk moved her laboratory from Ontario, Canada to Baltimore, Maryland. I anticipate that her collaboration with Dr. Stone, others in the Vasculitis Center, and scientists from many quarters of Johns Hopkins will have far-reaching implications for inflammatory vascular disease.

As a rheumatologist with a special interest in vasculitis, I care for many people like Courtney. Their illnesses have been visited upon them for reasons that are largely unknown and entirely unfair. I've always admired those patients of mine who, given lemons, choose to make lemonade. Courtney is one of those. In addition to her own fortitude, she has her family's love and support to thank for her progress. We and our other patients do, too.

David B. Hellmann

Coming in the Winter Issue:

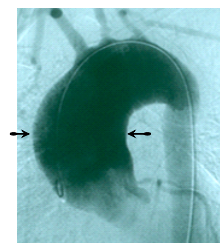
- ◆ Proteomics and Vasculitis
- ◆ Judy Harrison's New Role
- ◆ New Research Findings from the Johns Hopkins Vasculitis Center

Takayasu's Arteritis (TA)

TA ranks among the most difficult disorders in all of medicine to diagnose. The disease is characterized by inflammation within the largest blood vessels of the body – the aorta and its major branches. The inflammation may smolder for years, causing a variety of non-specific complaints. The symptoms and signs of TA typically flummox a long series of physicians before the correct diagnosis is made.

There are often considered to be two “phases” of TA: 1) an inflammatory phase, in which weight loss, musculoskeletal pains, fever, and fatigue predominate; and 2) a stenotic phase, in which longstanding inflammation within blood vessel walls leads to vascular narrowing. The typical absence of palpable pulses in the wrists during the stenotic phase has led to the alternative name of “pulseless disease” for TA.

The classic TA patient is a young woman. The disease occurs approximately ten times more frequently among women than men, and has a predilection for women of Asian heritage. The reasons for this demographic skewing are not clear.



Aneurysm formation in the aorta (bulge indicated by arrows)



Severe narrowing at several sites in the left subclavian artery (the artery to the arm)

Long-term complications of TA in some patients include limb claudication (dull pain in the arm or leg during exercise), high blood pressure because of renal artery involvement, and dilation of the aorta that sometimes leads to surgery. Treatments for TA include judicious quantities of steroids, other immunosuppressive medications, and careful observation for potential complications of the disease. In the management of TA, experience on the part of the physician(s) and education on the part of the patients are two vital contributors to good outcomes.



Johns Hopkins
(1795—1873)

Johns Hopkins University was created through the vision and philanthropy of one man, Johns Hopkins, a Baltimore shipping and railroad magnate.

If you are interested in knowing more about how you can support the mission of The Johns Hopkins Vasculitis Center in discovery, teaching, and patient care, please contact:

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The Patient Care Coordination Team

The Vasculitis Center has always been blessed with outstanding Patient Care Coordinators. Most of you reading this article – and certainly all who have visited our Center in person – know Judy Harrison and Chasity Wiener, both of whom served with great distinction in that role for several years. Judy, still very much in evidence, was recently promoted to Clinic Manager; “Chas” has assumed another administrative role in the Rheumatology Division.

Bearing in mind their importance, I am pleased to introduce our two new Patient Care Coordinators, Cynthia Bethea and Sidone Lawrence. Cynthia and Sidone move into their positions at a time when the Center is busier than ever before, with four faculty members, two fellows, two (soon to be three) Research Coordinators, a bevy of medical residents, several major clinical trials, other large research studies and, of course, more than 1000 patients seen regularly in the Center.

Cynthia Bethea was discovered by our “talent scouts” when she first worked in the Center as a temp several months ago. We were so impressed by her congeniality and ability to learn new skills quickly that we courted her again when a vacancy opened in a Care Coordinator position. The toughest job she’ll ever love has grown on Cynthia. She has accepted our offer to join the Center full-time and is rapidly mastering the nuances of her role. Cynthia has trained as a Medical Assistant and is a certified insurance coder. Before joining the Vasculitis Center, she worked in pediatrics in the private sector.



Cynthia Bethea

The lilting Caribbean voice that will probably answer the phone when you call 410-550-6825 belongs to Sidone (pronounced “Sih doe’ knee”, *please don’t call her Sid!*). Sidone has worked for Hopkins for more than 6 years in a variety of



Sidone Lawrence

capacities. She was a Care Coordinator with the Transplant Team for several years, a position comparable to her Vasculitis Center role in terms of the complexity of patient issues. She has also worked as a Medical Office Coordinator in the Department of Surgery and as an Administrative Secretary for one of the Johns Hopkins Hospitals’ Vice Presidents. Her various work experiences have convinced her that her greatest professional enjoyment comes from the daily interaction with patients; she now returns to Patient Care Coordination with us.

I often emphasize to our faculty and staff that we must have superstars at every position in the Vasculitis Center. In Cynthia and Sidone, we have them. Please join me in welcoming Cynthia and Sidone the next time you are at the Center. You will enjoy working with them, and you can be sure the feeling is mutual.

“Methotrexate”

Our newest medication brochure,
“Methotrexate”
 will be available soon online at
<http://vasculitis.med.jhu.edu>
 (and in hard copy by request)

David B. Hellmann Wins Teaching Award



At Johns Hopkins, teaching constitutes the essence of being a Professor. For David Hellmann, teaching medical students, residents, and colleagues has always been a major career focus. Recently, Dr. Hellmann's superb talents as a teacher were recognized again, this time by the Senior Class of 2003 at the Johns Hopkins University School of Medicine. Dr. Hellmann was elected by the class to receive the **George J. Stuart Award** for outstanding clinical teaching. Through the efforts of Dr. Hellmann and others at Johns Hopkins Bayview, the General Medicine Clerkship at Bayview now receives the highest ranking by the medical students among all such programs at the University. Dr. Hellmann's colleagues in the Vasculitis Center take great pride in his achievements in the field of medical education.

An Aerobic-A-Thon In Memory of Helene Cunningham

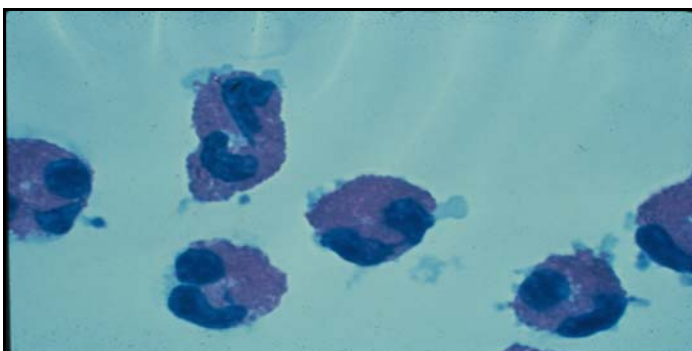
She was a dental hygienist from New Jersey, the wife of a school principal, and the mother of two teen-aged boys. In 2000, Helene Cunningham developed Churg-Strauss Syndrome. Before the diagnosis could be made, she had developed irreversible damage from the disease. Tragically, she died of its complications several months later.



Helene Cunningham

Although Mrs. Cunningham was not a Vasculitis Center patient, we were touched to learn that the family had requested donations to the Johns Hopkins Vasculitis Center in lieu of flowers. The response from Mrs. Cunningham's family and friends was overwhelming. In the weeks after Mrs. Cunningham's death, more than 200 individual contributions were made to the Center in her memory.

Mrs. Cunningham's cousin, Rose Michaelson, honors her memory in another way: by organizing charitable events to support vasculitis research. For each of the past two years, Mrs. Michaelson has conducted Aerobic-A-Thons in memory of her cousin. Mrs. Michaelson plans a Walk-A-Thon for Vasculitis in 2004.



The eosinophil. This cell appears to be the arch-villain in the Churg-Strauss syndrome. Its carmine-colored cytoplasm (cell body) and bi-lobed nucleus are characteristic features.



The 2003 Aerobic-A-Thon for Vasculitis Research (Pembroke, Florida)

FAQ—Azathioprine (AZA [Brand Name: Imuran])

Mr. Chetan Modi is a 38 year-old electrical engineer from India (by way of his now permanent home in Clifton, VA). He was diagnosed with Churg-Strauss Syndrome (CSS) in the autumn of 2002. At that time, he had suffered from refractory sinus problems for two years. After the sinus problems began he developed fevers, asthma, a thirty-pound weight loss, purpura [Figure], and a “wrist drop” [Figure], caused by infarction of his radial nerve. Laboratory tests indicated that Mr. Modi had high numbers of eosinophils in his blood [See figure page 5], a laboratory feature characteristic of CSS.



“Purpura”: A vasculitic skin rash in a patient with Churg-Strauss Syndrome

The development of CSS threatened both Mr. Modi’s livelihood — working with a computer is difficult without hands that function — and his life. After he started treatment with prednisone and cyclophosphamide (CYC) he began to stabilize but then developed a common complication of that treatment: hemorrhagic cystitis, caused by CYC-induced inflammation of the bladder lining. The cystitis meant that he had to stop CYC, the medication that had appeared to be arresting his vasculitis. *What next?*

Next, in January 2003, Mr. Modi saw Dr. Stuart Levine in the Vasculitis Center. After sizing up Mr. Modi’s situation, Dr. Levine prescribed AZA. What is this medication? Below are the answers to some frequently-asked questions about AZA:

What roles does AZA play in the treatment of vasculitis?

AZA is a versatile medication originally developed as a chemotherapy drug. Between 1975 and 1995, it gained widespread use as a drug to prevent organ rejection in transplant recipients. AZA is now used to treat many forms of vasculitis and has several major uses: 1) as a “steroid sparing agent”; 2) as an alternative to (or, more commonly, replacement for) CYC; and, 3) as a remission maintenance agent.

Which forms of vasculitis is AZA used to treat?

AZA has been employed at some point in just about all forms of vasculitis. It is most commonly used now in “ANCA-associated vasculitis” (Wegener’s granulomatosis, microscopic polyangiitis, CSS); polyarteritis nodosa; Behcet’s disease; and vasculitis confined to the skin.

How is AZA taken?

Usually by mouth once a day, starting at 50-150 mg/day and increasing sometimes to as much as 200 mg/day.

Are there any tests that should be performed before I start AZA?

ABSOLUTELY. “TPMT” is an acronym for an enzyme (the full name of which is “thiopurine methyltransferase”) that is essential to metabolizing AZA. One person in 300 does not possess this enzyme and is unable to process the drug at all. The absence of TPMT may lead to very serious side effects, particularly severe suppression of the bone marrow — the organ that produces red and white blood cells and platelets. One person in 10 has a partial deficiency of this enzyme and is also at greater risk for side effects than individuals with normal amounts of TPMT.

How is one’s level of TPMT tested?

The presence (or absence) of the gene that encodes TPMT can be evaluated by a simple blood test that is now commercially available. The test can be drawn in your doctor’s office. Results may take from one to two weeks.

Does AZA work?

AZA does not work as swiftly as prednisone nor is it as powerful as



“Wrist drop”: the patient is unable to raise her left hand. The right hand is also weak.

CYC, but it is often very effective in vasculitis (and less toxic than either of the other medicines). A recent clinical trial in Europe showed that AZA is as effective as CYC in maintaining disease remissions in patients with ANCA-associated vasculitis.

How does AZA work?

AZA works by inhibiting both B and T lymphocytes, important components of the immune system response. Among its other effects, AZA leads to a decrease in antibody production.

Does AZA have significant side effects?

Although AZA is usually safer than prednisone or cyclophosphamide, it does have a number of potential side effects for which patients and doctors must remain alert:

- *Nausea* — mild to absent in most patients, but intolerable in some
- *Bone marrow suppression* — lowering of the white or red blood cell or platelet counts
- *Infection* — by “opportunistic” microbes that capitalize on patients’ suppressed immune systems
- *Liver* — elevated liver function tests, reflecting liver inflammation
- *Pancreas* — in rare cases, AZA can cause pancreatitis
- *Malignancy* — for patients who take AZA for prolonged periods, there may be a slight increase in the risk of some cancers.

What kind of monitoring is required for patients on AZA?

Patients should have all of the tests shown in the Table approximately one week after starting AZA. If there are no abnormalities of these tests several weeks after starting AZA, the monitoring interval may be increased to every 4-6 weeks. For patients who have had abnormalities of these tests or who have taken CYC in the past, closer monitoring may be required.

Laboratory Tests For Patients On AZA*

Complete blood count
(White blood count, hematocrit, platelets)
Liver function tests
(Albumin, AST, ALT)
Kidney function monitoring
(Creatinine)

**Other tests may be required to monitor patients’ underlying disease*

POSTSCRIPT

This summer, Dr. Levine walked into Examining Room #3 to find Mr. Modi smiling broadly and holding his arm and hand out straight, palm down. The weight of his limb could now be supported by the strength of his forearm muscles, now dramatically recovered. Mr. Modi’s eosinophil count is normal and his strength continues to improve. His residual asthma remains under treatment and he hopes to return to work soon.

Using AZA Safely

FIVE THINGS TO REMEMBER WHEN TAKING AZA:

- Blood tests every 4-6 weeks – and more commonly if your counts have been low.
 - A TPMT test (*see text*) should be checked before starting AZA.
 - Patients previously treated with CYC may be more susceptible to low blood counts when treated with AZA.
- Alert your physician immediately if you begin to feel sick while taking AZA.
 - Antibiotic prophylaxis against certain “opportunistic” infections may be indicated for some patients on AZA.

Welcome Aboard, Dr. Levine!

The Vasculitis Center is very pleased to welcome Dr. Stuart Levine onto the Center's faculty. Dr. Levine, a graduate of Yale University, went to medical school at Columbia University's College of Physicians and Surgeons. After training in both Internal Medicine and Rheumatology at Johns Hopkins, he became an Instructor at the Johns Hopkins University School of Medicine on July 1, 2003. He and his wife Amanda have a daughter, Daryn, now two years old.



The Levine Family
(Amanda, Stuart, & Daryn)

In “Greek Lessons”, Dr. John Stone recounts the first patient he and Dr. Levine shared.

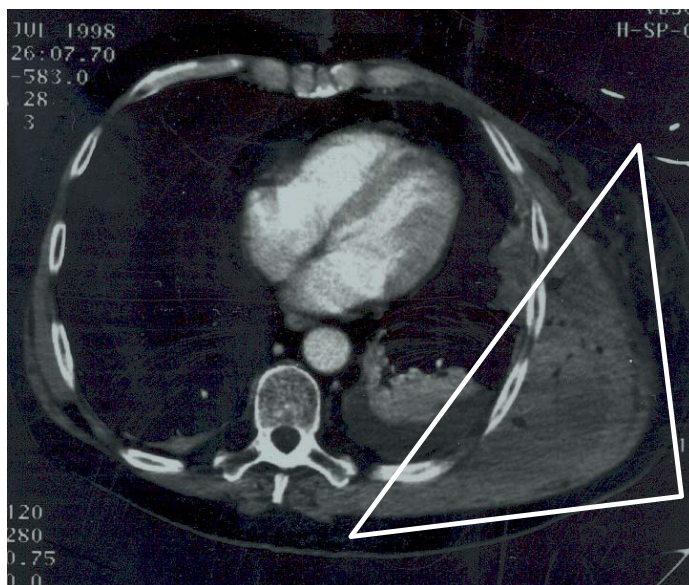
Greek Lessons

My collaboration with Dr. Levine began during his first call night as an intern at Johns Hopkins, five years ago now: July 4, 1998. In addition to the new patient admissions who were piling up that night, Dr. Levine had a patient from Greece who was—as interns say—“crashing”. The patient, Mr. George Aidinis, had come to Hopkins from Athens for an evaluation of his enigmatic lung problem, thought to be a complication of vasculitis. Mr. Aidinis’ attending physician Dr. David Hellmann, then Director of the Osler Housestaff, was out of town for a few days. The day before Dr. Levine’s first night on call, an open lung biopsy had pinpointed the cause

of Mr. Aidinis’ problem: a blood clot, formed in Mr. Aidinis’ leg, had traveled to his lung, where it blocked a large blood vessel. On July 4th, Dr. Levine’s initiation into the rigors of internship, Mr. Aidinis began having more blood clots, known as pulmonary “emboli”, migrate to his lungs. Like so many medical terms, the word “embolus” is taken from Greek: the word *embolos* or “plug”. Mr. Aidinis was one big *embolos* – or several small ones – from death.

While I was covering for David Hellmann during his absence, I received a frantic call at home from Mrs. Aidinis about her husband’s deteriorating condition. I left our 4th of July party immediately that night for the hospital. With fireworks just beginning to explode over the Inner Harbor, I walked into Mr. Aidinis’ room and met Stuart for the first time at the bedside. After Dr. Levine had related the patient’s history and we began to examine the patient, I became concerned at the lack of a pulse in Mr. Aidinis’ left wrist. This turned out to be a complication of Mr. Aidinis’ longstanding vasculitis and not related directly to his acute lung problem. But there were plenty of other things to worry about; the situation was precarious.

Mr. Aidinis desperately needed to be anticoagulated to prevent further blood clots and to speed the resolution of those already in his lungs. However, he



Collection of blood in the soft tissues of the chest wall (indicated within triangle [above])

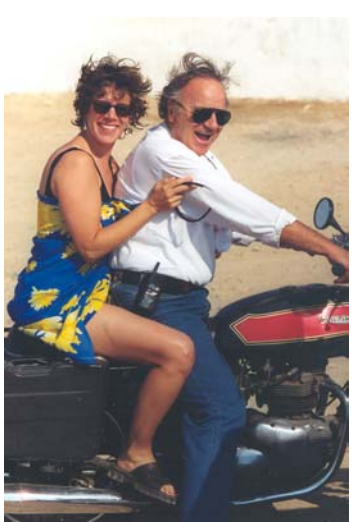
had undergone lung surgery only 24 hours earlier and was at risk for severe bleeding if his blood was “thinned” to treat the emboli.

After a quick evaluation on the floor, Dr. Levine and I transferred Mr. Aidinis to the Medical Intensive Care Unit, where treatment with heparin was begun under the most controlled

circumstances possible. Mr. Aidinis confirmed our worst fears by bleeding extensively into his chest wall [Figure]. Over the next two weeks, he was started on and discontinued from anticoagulation many times as we negotiated the tricky line between thin enough blood and too much bleeding. We consulted with colleagues from Hematology, Pulmonary Medicine, and Cardiac Surgery. Nota waited by his bed virtually around the clock. The Aidinis’ daughter, Christina, journeyed to Baltimore from Greece. Several days seemed as if they might be Mr. Aidinis’ last, but he eventually pulled through.

After 45 days in Baltimore that summer, the Aidinis became simply “George and Nota” to many of the Hopkins staff who had cared for them. They returned to Athens, where George resumed his career as a lawyer and his favorite pastimes, including touring the island of Aegina in his jeep and on his motorcycle [Figure]. George and Nota have since hosted many friends from Hopkins in Greece, witnessed the wedding of Christina, and celebrated the birth of two grandsons (one of whom is named in George’s honor). With his vasculitis treated successfully, George and Nota return to Hopkins annually for check-ups and to renew friendships within the Hopkins community.

As for Dr. Levine, he came to Hopkins already primed for a career in Rheumatology by the research he had done at Columbia. The encounter with Mr. Aidinis on his first call night sealed his choice. Fol-



George Aidinis, his bike, and Mrs. Martha Stone

lowing his three-year residency on the Osler Housestaff, he completed a Rheumatology fellowship that included regular stints in the Vasculitis Center. As a faculty member of the Center, Dr. Levine’s research addresses the reasons that the immune system goes awry in these conditions to attack patients’ blood vessels. During his training at Hopkins, Dr. Levine also became an outstanding and devoted clinician. He continues to hone this art and to couple his research to patient care each Thursday in the Vasculitis Center clinic.

John H. Stone

The Johns Hopkins Vasculitis Center Volunteer Program

We are a growing organization of dedicated clinical and research professionals. There are often times when additional “hands on deck” would be helpful. A variety of volunteer opportunities in the Center are available now.

We would be delighted to work with volunteers who are:

- Sensitive to the needs of vasculitis patients
- Interested in learning more about vasculitis
- Willing to share your general office skills
- Eager to make a difference in vasculitis care and awareness

Our business hours are 8:00 am to 4:30 pm, Monday through Friday. Our office is located on the campus of the Johns Hopkins Bayview Medical Center at the following address:

5501 Hopkins Bayview Circle
Johns Hopkins Asthma and Allergy Center
Room 1B1A
Baltimore, MD 21224

For more information about our volunteer opportunities, please contact:

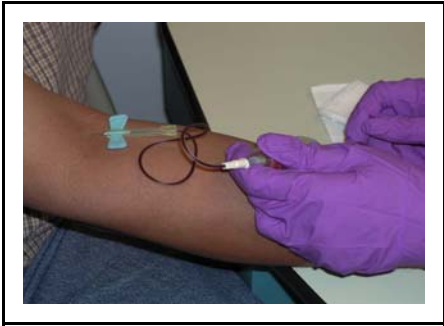
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Clinic Corner: New Clinical Laboratory System

Effective this past July 15th, the Vasculitis Center sealed a deal with the Department of Pathology at Hopkins to have all clinical labs drawn in the Center processed downtown at Johns Hopkins Hospital (JHH). This arrangement facilitates the reporting of laboratory results, which can now be done on the password-protected electronic patient record system known as EPR. (Faculty at the Center have always used EPR for the dictation of clinical notes). Merging of the laboratory services with the Hopkins EPR system now re-unites the Center's clinical data system with the system downtown. Clinical results are available within three hours. To ensure first-rate service, the Department of Pathology provides

an additional phlebotomist/technician for our Center (this person is to be named shortly). Samples are picked up from the Vasculitis Center four times a day for transportation downtown and tracked using a bar-coding system. The processing and storage of research samples continues to be performed on site at the Vasculitis Center. Now one month into operations, the system is working wonderfully.



WE'RE ON THE WEB!
[HTTP://VASCULITIS.MED.JHU.EDU](http://VASCULITIS.MED.JHU.EDU)

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 VASCULITIS CENTER**

