

# UNIVERSITY OF MARYLAND MEDICINE ROUNDS

CLINICAL AND RESEARCH UPDATES FROM *THE UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE*  
AND *THE UNIVERSITY OF MARYLAND MEDICAL CENTER*

## PANCREAS TRANSPLANT PROGRAM AIMS TO EXPAND THESE LIFE-CHANGING SURGERIES

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Less than a year after assuming the leadership of University of Maryland Medical Center's (UMMC) Pancreas Transplant Program — one of the busiest in the country — Joseph Scalea, M.D., has already begun to expand the number of these transformative surgeries through comprehensive, multidisciplinary coordination.


Launched in the early 1990s, the pancreas transplant program successfully performs between 15 and 25 pancreas transplants each year. UMMC is among the

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### KEY POINTS:

- Pancreas Transplant Director Dr. Joseph Scalea hired in August 2016
- UMMC continues longstanding tradition of high-volume pancreas transplants
- Insulin-dependent, severe diabetics considered for pancreas transplant
- Operation allows patients to live a normal life after decades of complications



A portrait of Joseph Scalea, M.D., an assistant professor of surgery. He is a man with dark hair, smiling, wearing a white lab coat over a blue and white checkered shirt. The background is a blurred clinical setting. A red text box in the top right corner contains his title and focus areas.

ASSISTANT PROFESSOR  
OF SURGERY, Joseph Scalea,  
M.D., focuses on pancreas  
transplantation as well as  
autologous and allogeneic  
islet cell transplantation.

## PANCREAS TRANSPLANT PROGRAM AIMS TO EXPAND THESE LIFE-CHANGING SURGERIES | CONT'D FROM P1

top 15 centers nationally in volume of pancreas transplants, which are often combined with kidney transplants as a result of organ damage stemming from severe diabetes.

Although it is a major surgery, pancreas transplantation often dramatically improves patients' lives, alleviating longstanding concerns about its extensive damage to their bodies and way of life, explains Dr. Scalea, who began his role as UMMC's director of pancreas and islet cell transplantation in August 2016 after completing a transplant fellowship at University of Wisconsin.

"A lot of pancreas transplant programs around the country are getting smaller. While our numbers have fluctuated in the past, it looks like we're on the upswing," says Dr. Scalea, also

an assistant professor of surgery at University of Maryland School of Medicine. "I anticipate us doing 25 to 40 pancreas transplants each year over the next few years. We definitely have the numbers to support this kind of sustained growth. We're a nationally recognized thought leader in pancreas transplantation, and the program is changing — in a good way."

### **SIGNIFICANT BENEFITS AFTER DECADES OF SUFFERING**

Dr. Scalea credits Chairman of Surgery Stephen Bartlett, M.D., with helping to pioneer pancreas transplantation at UMMC, and the country, beginning more than 25 years ago. First performed in the United States about 50 years ago, few such transplants were done nationally until the mid-1980s, when surgical techniques improved along with the

immunosuppressive drugs vital for preventing organ rejection in transplant recipients. While some examples of living donor pancreas transplantation have been performed elsewhere, donor pancreases come from cadavers.

"Dr. Bartlett had a vision for how to treat the diabetic patient with renal failure," Dr. Scalea says. "Since then, pancreas transplantation has been an important part of our program and we are focused on making sure we stay at the top."

Although all pancreas transplants are performed in patients with diabetes — a condition at epidemic levels in the United States, with nearly 29 million affected — not all diabetic patients require a pancreas transplant. Only a "small minority" are candidates for a pancreas transplant, Dr. Scalea notes,



“WE’RE A NATIONALLY RECOGNIZED THOUGHT LEADER IN PANCREAS TRANSPLANTATION, AND THE PROGRAM IS CHANGING — IN A GOOD WAY.”

- JOSEPH SCALEA, M.D.

and most of these patients have a severe form of type 1 or insulin-dependent diabetes.

Despite improving medical management, many diabetic patients have suffered for decades from the ravaging effects of their disease — especially kidney failure — which is why dual pancreas-kidney transplantation is performed at UMMC in the vast majority of cases. Other diabetic complications include neuropathy, retinopathy, gastroparesis, and severe glucose instability, when erratic blood sugar levels can cause tremors, seizures or even coma.

“We have plenty of juvenile diabetes cases in the country, so why aren’t we doing more pancreas transplants?” asks Dr. Bartlett, the Peter Angelos Distinguished Professor and executive vice president and surgeon-in-chief of the University of Maryland Medical System.

“The number of usable pancreases in donor organs is fairly limited. We’re still at a stage where we’re wasting more organs and not transplanting as many as we could. The whole nation could be doing more than 3,000 per year if we optimally used the donor supply, but that’s still three times more than we’re doing now.”

### LIFE AFTER SURGERY

In a three- to five-hour operation — depending on whether a dual-organ transplant is being performed — surgeons leave the native pancreas in place. The transplanted pancreas

is then sewn in, typically into the right side of the abdomen. The donor organ typically begins working immediately, producing insulin as well as pancreatic juices that surgeons drain into the recipient’s intestines by sewing together donor and recipient intestines, Dr. Scalea explains.

Transplant patients typically remain hospitalized for five or six days afterward unless unforeseen issues arise. The most common risks of pancreas transplantation are infection and blood clots in the new organ, Drs. Scalea and Bartlett say. But, recovery proceeds smoothly for most, and eventually patients require only one or two follow-up visits each year for monitoring.

The biggest change, Dr. Scalea says, is that patients no longer require insulin to control their blood sugar — an element of their care that these patients have grown to obsess over. “The improvement in quality of life is quite remarkable,” comments Dr. Scalea.

“It’s a life-changing event,” he says. “A lot of patients say they continue to check blood sugars because they’re so used to doing it. When the surgery is all over, they almost don’t know what to do. The diabetes, as they’ve known it — is gone.

In the aftermath of a dual pancreas-kidney transplant, Dr. Bartlett says, patients often become emotional.

“In a five-hour operation, you’ve cured both disorders at once,” he says.

“Patients no longer need insulin or kidney dialysis, and it allows them to live a completely normal life. It’s amazing. When they wake up, they feel completely different.”

### MULTIDISCIPLINARY EFFORT TO HELP MORE PATIENTS

Dr. Scalea hopes to continue increasing UMMC’s volume of pancreas transplantation by reaching out to endocrinologists and nephrologists — who are deeply involved in diabetes care — in a comprehensive, system-wide effort. His goal is for UMMC’s transplant division to be a partner not in “pancreas transplantation,” per se, but rather a partner in the care of patients with severe diabetes.

“While only a small percentage of those with diabetes actually need a pancreas transplant, our goal is to identify and provide this lifesaving service for those patients, many of whom are managed by [specialists] who may not know a lot about pancreas transplant or who’s a good candidate,” he says. “Under my leadership, I hope to build a multidisciplinary team for diabetes care.” Dr. Scalea comments that “Luckily, we have a great team in place already, inclusive of Dr. Beth Lamos and Dr. Kashif Munir, in the department of endocrinology. Further, it is my estimation that our team is only going to get even stronger over the course of the next several years.”

Dr. Scalea says he envisions UMMC’s Pancreas Transplant Program becoming “another tool in the endocrinology toolbox,” and yet, another way to help patients who have severe diabetes.

“The University of Maryland has been a bastion for pancreas transplantation for a very long time. I only hope to continue to build on that tradition of success,” he says. “I think we can help more people if we’re smart about it.” +



# LEADING TREATMENT IN BONE AND SOFT TISSUE ONCOLOGY, INCLUDING PIVOTAL IMMUNOTHERAPY TRIAL

**B**one cancers and soft tissue sarcomas are relatively rare, but the University of Maryland Medical Center's (UMMC) high treatment volume for these tumors has led physicians here to create a first-of-its-kind clinical trial incorporating leading-edge immunotherapy.

The Bone Cancer and Soft Tissue Sarcoma Service has grown rapidly in the three years since surgeon Vincent Y. Ng, M.D., arrived at University of Maryland Marlene and Stewart Greenebaum Comprehensive Cancer Center. Dr. Ng estimates he and colleagues, including Daniel Lerman, M.D., both assistant professors of orthopaedics at the University of Maryland School of Medicine, have treated several hundred cases of bone and soft tissue tumors. Each year, only about 3,000 new cases of bone sarcoma and 12,000 new cases of soft tissue sarcoma are diagnosed in the United States, making UMMC's case load stand out.

Treating both primary and metastatic tumors, including sarcomas, chordomas, adenocarcinomas, myelomas, lymphomas and squamous cell cancers located in the soft tissue or bone, Dr. Ng is joined by a comprehensive team of highly trained experts in multiple fields of medicine and surgery. Together, they successfully manage tumors primarily in the upper and lower limbs, the musculoskeletal pelvis, the spine and the sacrum.

"Bone and soft tissue sarcomas are relatively rare when compared to breast cancer or other carcinomas of solid



"THE VOLUME OF COMPLEX ORTHOPAEDIC PATIENTS WE HANDLE AT UNIVERSITY OF MARYLAND IS AS HIGH AS ANYWHERE IN THE COUNTRY."

- VINCENT Y. NG, M.D.

organs," explains Dr. Ng. "That's one reason they're often overlooked in the community and go undiagnosed until they're relatively advanced in the disease process. Part of our job is educating the public and referring providers as to what might be a life-threatening cancer requiring urgent tertiary specialty care. The volume of complex orthopaedic patients we handle at University of Maryland is as high as anywhere in the country."

## SYMPTOM CONFUSION ABOUNDS

Representing all age groups, orthopaedic oncology patients come to UMMC with tumors in soft tissues or bones in the extremities, pelvis or trunk. But many patients — and even physicians — are misinformed about which symptoms may indicate whether these tumors are benign or malignant, Dr. Ng says.

### KEY POINTS:

- UMMC's Bone and Soft Tissue Sarcoma Service tackles a high volume of complex surgical cases
- Referrals to UMMC specialists are important due to confusion over symptoms by patients and physicians alike
- Ortho-oncology cases treated with surgery, radiation, chemotherapy and/or immunotherapy
- Access to Maryland Proton Treatment Center and experienced radiation oncologists offers the advantage of precise radiation
- First-of-its-kind soft tissue sarcoma trial adds immunotherapy to standard treatment, aiming for improved outcomes



ASSISTANT PROFESSOR OF ORTHOPAEDICS, Vincent Y. Ng, M.D., has a research and clinical interest in using advanced radiation treatment in combination with surgery for challenging tumors.

“For soft tissue masses, one of the big misconceptions is that just because it’s painless or has been present for a while, it’s nothing to worry about,” he says. “When they’re painless, they’re often overlooked as hematomas, muscle sprains, bruises or lipomas, when they’re actually something more sinister.

“With bone tumors, malignant cases are often painful and benign ones are not usually painful, but that’s not a hard-and-fast rule,” Dr. Ng continues. “People should know that any lump or bump that’s been there for a couple of months — and certainly if it’s growing — should be checked out. Medical providers should know that we can typically see any patient with any concern for a bone or soft tissue tumor in clinic within a couple days — we treat everything from very large tumors deep in the pelvis to small tumors in the finger. We can coordinate all of the diagnostic imaging, biopsy, treatment and follow-up.”

Other necessary clarification comes from distinguishing between bone and soft tissue sarcomas of the pelvis from other masses occurring in that region. “Tumors we treat

in the pelvis are usually bony tumors, in either the sacrum or pelvis,” Dr. Ng explains. “They’re distinct from GYN, gastrointestinal, genitourinary or bladder tumors.”

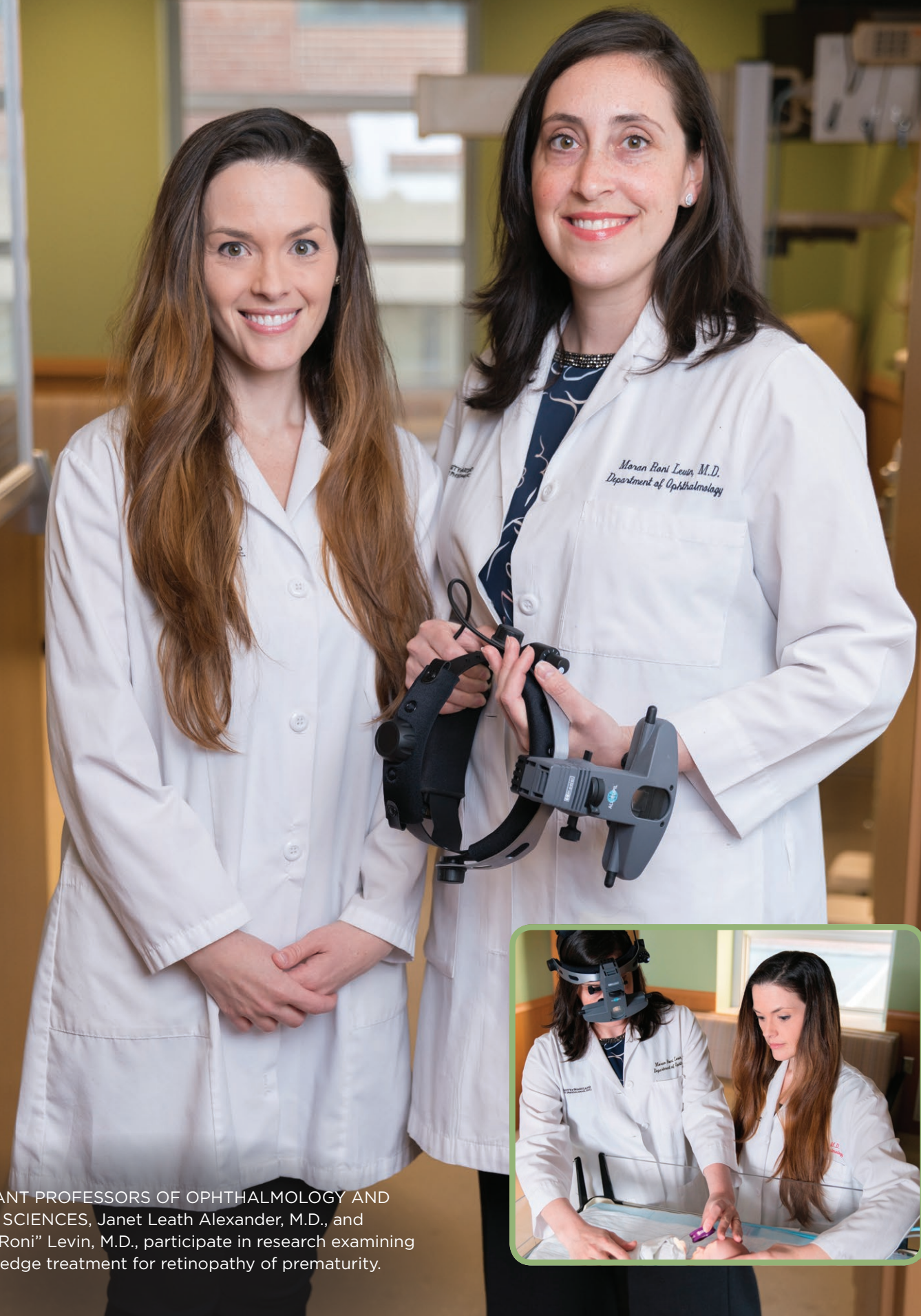
### DEEP BENCH OF SPECIALISTS OFFERS CRUCIAL SUPPORT

Considering the widespread confusion about symptoms, correctly diagnosing bone or soft tissue tumors typically requires imaging such as PET, CT or MRI scans, Dr. Ng says. These are often combined with minimally invasive techniques to biopsy samples of the mass. Once diagnosed, treatment can include surgery, radiation, chemotherapy or a blend of modalities, but it is always tailored to each individual case.

“Orthopaedic oncology, I like to say, is quintessential personalized medicine,” Dr. Ng says. “Not only are we tailoring the treatment to the tumor, but we’re also tailoring it to the patient. A lot of surgeries we do are so different for each patient, depending on the anatomic location of the tumor.”

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ASSISTANT PROFESSORS OF OPHTHALMOLOGY AND VISUAL SCIENCES, Janet Leath Alexander, M.D., and Moran "Roni" Levin, M.D., participate in research examining cutting-edge treatment for retinopathy of prematurity.

# FOCUSING ON RETINOPATHY OF PREMATURITY WITH PEDIATRIC OPHTHALMOLOGY

**T**he University of Maryland's longstanding prominence in the field of ophthalmology is continuing with elite participation in international research examining cutting-edge treatment for retinopathy of prematurity (ROP) — a potentially blinding eye disorder primarily affecting the smallest premature infants — as well as efforts to educate and ease the burden on parents of these babies.

While not all premature infants develop ROP, the condition is more prevalent in those weighing less than 2.75 pounds at birth and born before 31 weeks of gestation. Volume of such cases is likely greater at University of Maryland Medical Center (UMMC) than most centers regionally due to transfers of acutely ill preemies to the Level 4 neonatal intensive care unit (NICU) here with 52 beds.

"Given the availability of all pediatric subspecialties, we often have babies transferred to UMMC for the management of complex medical and surgical issues. The level of acuity of our patients lends itself to a high proportion of babies with ROP," says Moran "Roni" Levin, M.D., a pediatric ophthalmologist who works closely with Janet Leath Alexander, M.D., both assistant professors of ophthalmology and visual sciences at University of Maryland School of Medicine. "Of the babies we screen, the majority of them have some form of ROP," Dr. Levin adds. "The more premature the baby and the lower the birthweight, the more likely a baby will be affected."

The team also works with community physician, Mark Preslan, M.D., a clinical associate professor of ophthalmology and visual sciences, who as a participant in several recent multi-center studies has contributed to some of the most influential ROP research.

## UNIQUE SCREENING TOOL FOR PATIENTS

ROP occurs when abnormal blood vessels grow and spread throughout the retina, which can leak and pull the retina out of place. Because much of the fetal retina develops in the final 12 weeks of pregnancy, premature birth disrupts this process. Of the approximately 3.9 million infants born in the United States each year, about 28,000 weigh 2.75 pounds or less at birth and between 14,000 and 16,000 of them are affected by ROP, according to the National Eye Institute.

## KEY POINTS:

- Retinopathy of prematurity cases higher at UMMC because of Level 4 NICU
- UMMC participating in international, multicenter trial for new drug therapy
- Ophthalmologists screened 120 babies for ROP in 2016
- Additional efforts center on educating parents and easing burden
- About 10% require treatment for severe ROP

At UMMC, 94 of the roughly 1,300 babies born in 2016 met ROP screening criteria, but Drs. Levin and Alexander screened a total of 120 because an additional 26 infants were transferred or had high-risk features warranting a closer look. Requiring supplemental oxygen can also place premature babies at higher risk for ROP, "but our priority is to communicate closely with neonatologists in order to maintain the balance of oxygenating vital organs and saving sight," Dr. Alexander explains. "We all have the same goal, to protect vision and also keep them as systemically stable as possible."

Drs. Alexander and Levin screen infants for ROP using specialized instruments and retinal angiography to look for subtle changes in the retina, including a unique camera that can photograph babies' retinas at their NICU bedside. Because of this rigorous screening, babies' risk of blindness or vision loss is rare.

"It's a very helpful tool for us to compare our exams from week to week and look for subtle changes in the retina, but also to educate families," Dr. Levin says. "When we show parents actual images of their child's eyes, it helps them understand the disease process and what we are treating."

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# UNIVERSITY OF MARYLAND SPINE NETWORK STREAMLINES APPROACH TO MAXIMIZE OUTCOMES

From disc herniations and spinal stenosis to tumors and more, spine surgeons throughout the University of Maryland Medical System (UMMS) diagnose and treat the full breadth of spinal conditions in many thousands of patients each year. But the launch of a new network to streamline all UMMS providers and facilities in treatment approaches, outcomes tracking and patient education minimizes disparities and maximizes results.

Formed less than two years ago and now in full swing, the University of Maryland Spine Network encompasses the University of Maryland Medical Center (UMMC) along with four other UMMS hospitals throughout the state. The collaboration allows patients to seek care locally while accessing the uniform benefits of the medical system, according to Steven C. Ludwig, M.D., head of the Division of Spine Surgery in UMMC's Department of Orthopaedics and a professor of orthopaedics at the University of Maryland School of Medicine.

Surgeons at each hospital perform nearly every type of spine surgery, including orthopaedic and neurological. Complex cases requiring additional resources are readily connected to the network's highly specialized care.

"Our goal is to tell the people of Maryland that regardless of where you have your spine surgery done, if you go to a University of Maryland physician, you can be reassured you're

getting the highest quality and safest care," says Dr. Ludwig. "By establishing the collaborative group, we work across disciplines. So you can be in private practice, a hospital-employed physician or an academic physician and be part of the network. It's a systems approach."

## LEADING-EDGE SURGICAL TECHNIQUES

Back and neck pain is a big burden nationwide, with the American Academy of Pain Medicine estimating that more than 26 million American adults experience it frequently. And while aging is a prime factor in spinal problems, Dr. Ludwig and his UMMS colleagues tackle both common and unusual spine conditions in all age groups.

In addition to those mentioned earlier, these also include disc replacement; deformities such as scoliosis and kyphosis; degenerative diseases of the cervical and lumbar spine; spinal infections; sports- and trauma-related spine injuries; and adult reconstructive spine surgery.

"Like getting gray hair, everyone is going to have age-related spine changes. With that, it's super-important to have a group of spine surgeons that takes a very careful history, does a very careful physical examination, discusses with patients previous treatments they've had and correlates that to advanced imaging to ensure making a proper diagnosis," Dr. Ludwig explains. "We aim to select the right procedure or right surgery for the right patient."

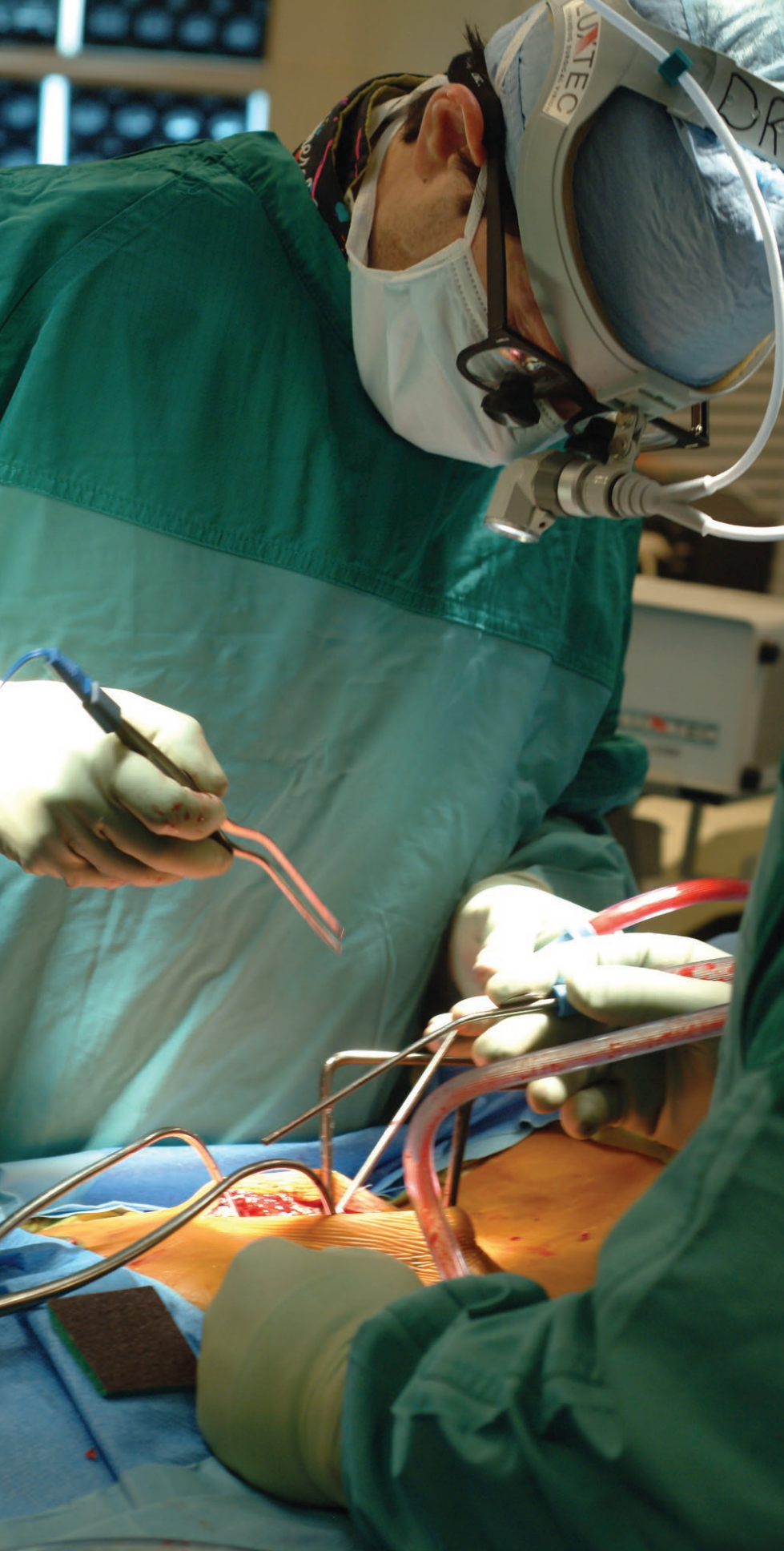
## KEY POINTS:

- University of Maryland Spine Network unites all spine surgeons throughout system for shared analysis, goals
- Network encompasses UMMC along with four UMMS member hospitals throughout state
- Spine surgeons meet bimonthly to analyze patient outcomes, other data
- UMMS hospitals perform nearly every type of spine surgery on both adults and children, including orthopaedic and neurological
- Spine patients also directed toward nonsurgical care options when appropriate

Increasingly, minimally invasive surgical techniques are being used nationwide to correct spinal disorders, shortening hospitalization time and speeding recovery. Within UMMS, Spine Network surgeons have already adopted several of the most leading-edge, minimally invasive procedures, such as a new spinal fusion technique to treat a variety of conditions, including vertebral compression fractures. They also perform cervical spinal disc replacement surgery with the first FDA-approved artificial disc for those with degenerative disc disease.

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PHYSICIAN MEMBERS  
OF THE UM SPINE  
NETWORK INCLUDE:

**Spiro Antoniadis, M.D.** – UM Upper  
Chesapeake

**Kelley Banagan, M.D.** – UMMC

**John Barry, M.D.** – UM Baltimore  
Washington Medical Center (UM BWMC)

**Hugo Benalcazar, M.D.** – UM Upper  
Chesapeake

**Amiel Bethel, M.D.** – UM BWMC

**Michael Dabbah, M.D.** – UM St. Joseph

**Randy Davis, M.D.** – UM BWMC

**Ira Fedder, M.D.** – UM St. Joseph

**Daniel Gelb, M.D.** – UMMC

**Charles A. Hartjen, M.D.** – UM Upper  
Chesapeake

**David Ibrahimi, M.D.** – UMMC

**Eugene Koh, Ph.D., M.D.** – UMMC

**Khalid Kurtom, M.D., FAANS, FACS** –  
UM Shore Health

**Danny Liang, M.D.** – UM BWMC

**Steven Ludwig, M.D.** – UMMC

**Paul McAfee, M.D., M.B.A.** – UM St. Joseph

**Neal Naff, M.D.** – UM St. Joseph

**Emeka Nwodim, M.D.** – UM BWMC

**Charles Sansur, M.D.** – UMMC

**Clifford Solomon, M.D.** – UM BWMC

**Gary Schwartzbauer, M.D.** – UMMC

# ROUNDING OUT CARE AND RESEARCH



ASSOCIATE PROFESSOR OF SURGERY, Sunjay Kaushal, M.D., Ph.D., injects stem cells into the heart of a baby with congenital heart disease.

## BABIES TREATED IN UNIQUE STUDY OF ADULT STEM CELL THERAPY FOR CONGENITAL HEART DISEASE

In a first-in-children randomized clinical study, medical researchers at the University of Maryland School of Medicine and the Interdisciplinary Stem Cell Institute at the University of Miami Miller School of Medicine have begun testing to see whether adult stem cells derived from bone marrow benefit children with the congenital heart defect hypoplastic left heart syndrome (HLHS). Surgeons are injecting the cells into babies' hearts during open-heart operations at the University of Maryland Medical Center. The researchers hope the cells will increase the babies' chances of survival as HLHS limits the heart's ability to pump blood from the heart to the body.

"The premise of this clinical trial is to boost or regenerate the right

ventricle, the only ventricle in these babies, to make it pump as strongly as a normal left ventricle," says lead researcher Sunjay Kaushal, M.D., Ph.D., associate professor of surgery, University of Maryland School of Medicine and director, pediatric cardiac surgery, University of Maryland Medical Center. "We are hoping this therapy will be a game-changer for these patients."

While stem cells have been used to regenerate adult hearts, Dr. Kaushal says improvements have been marginal. His research suggests results may be better in pediatric hearts: "The heart is able to remodel better in a younger patient than an older patient, because the body is still growing, good things are going on, and things are not deteriorating."



For more details on this study, see identifier NCT02398604 on [ClinicalTrials.gov](https://clinicaltrials.gov).

## PROMISING RESULTS FROM EXPERIMENTAL MALARIA VACCINE

An experimental malaria vaccine protected healthy subjects from infection with a malaria strain different from that contained in the vaccine, according to a study published in the *Proceedings of the National Academy of Sciences* (PNAS). The research was conducted by scientists at the University of Maryland School of Medicine and the National Institute of Allergy and Infectious Diseases (NIAID), part of the National Institutes of Health (NIH).

The Phase 1 clinical trial is important because in places where malaria is common, there is usually more than one strain. To be effective in the real world, a vaccine must protect against more than one. The study's lead researcher, Kirsten E. Lyke, M.D., associate professor of medicine at the University of Maryland School of Medicine and a senior scientist at the

Center for Vaccine Development, said the vaccine's versatility was promising. "Our study shows that that this vaccine can protect against at least two strains of malaria," says Dr. Lyke, who has studied malaria for more than a decade. "We need to continue our research, but this is a fantastic finding."

The PfSPZ Vaccine used in this study was developed by Sanaria Inc., of Rockville, Maryland. The vaccine contains weakened *P. falciparum* sporozoites that do not cause infection, but are able to generate a protective immune response that guards against live malaria infection. Earlier research with the vaccine found it to be safe, well-tolerated and protective for more than a year when tested in healthy U.S. adults against a single Africa-derived malaria strain matched to the PfSPZ Vaccine. ✚



## LEADING TREATMENT IN BONE AND SOFT TISSUE ONCOLOGY, INCLUDING PIVOTAL IMMUNOTHERAPY TRIAL | CONT'D FROM P5

Many orthopaedic oncology cases require some form of surgery. For complex pelvic surgeries, Dr. Ng often teams up with his partner, Dr. Lerman, another orthopaedic oncology surgeon, to minimize operative time and maximize patient safety. This is one of the advantages of having not only a multidisciplinary team, but also a well-equipped bone and soft tissue sarcoma service. Essential support is available from UMMC specialists and facilities experienced with handling critical patients such as trauma injuries or multi-organ transplants. A full complement of surgical subspecialists are readily available including those in spine, orthopaedic joint reconstruction, vascular, urology and plastic surgery. Musculoskeletal subspecialists in pathology, radiology and interventional radiology are also closely involved in patient care and a biweekly tumor board dedicated to bone and soft tissue tumors. Finally, world-class anesthesia and ICU support assist with long and life-threatening procedures, Dr. Ng says.

When radiation is required, the recently opened Maryland Proton Treatment Center (MPTC) elevates the level of precision care. Using the proton beam and other techniques of radiation can spare sensitive tissues and structures nearby from unnecessary radiation while still treating the tumor with a high dose of radiation to maximize effectiveness.

“Having all these different options and very experienced radiation oncologists definitely facilitates limb salvage,” Dr. Ng says. “In the old days, patients oftentimes would require limb amputation. Currently, we’re able to save limbs in the vast majority of cases, restore function, and give patients an improved chance of survival.”

### NOVEL TRIAL HARNESSES IMMUNE SYSTEM

Also setting the Bone and Soft Tissue Sarcoma Service apart is a novel soft tissue sarcoma clinical trial, combining standard treatment with the same class of immunotherapy drugs used successfully by former President Jimmy Carter in his well-publicized ongoing battle against metastatic melanoma. Spearheaded by Dr. Ng, UMMC’s trial aims to enroll about 35 patients with high-risk soft tissue sarcoma whose tumors are eligible for surgical removal. It will provide patients with soft tissue sarcoma access to the same type of immune checkpoint inhibitor agents that have revolutionized care in other cancer fields such as melanoma and lung cancer.

Participants will first be given precise radiation with anti-PD-L1 and anti-CTLA-4 immunotherapy followed by

surgical removal of the tumor. Cancer evades natural host defenses by suppressing white blood cell function and by impairing the ability of the immune system to recognize the tumor cells as a dangerous. The goal of this study is to improve survival by “uncloaking” the tumor using radiation and amplifying the tumor-killing properties of the immune system using immunotherapy.

“Immunotherapy has essentially revolutionized a lot of other fields in oncology,” Dr. Ng says. “Orthopaedic oncology hasn’t caught on as quickly to the developments in immunotherapy, so we want add it to our treatment for soft tissue sarcoma because there haven’t been any significant substantiated treatment breakthroughs in the last several decades. Patients with high-risk soft tissue sarcoma are at substantial risk for death, and we as a community of providers need to explore all avenues to improve survival while still adhering to the principles of treatment that we already know and have proven to work.”

Chemotherapy offers limited success in treating high-risk soft tissue sarcomas and is controversial in the non-metastatic setting due to varying results in large studies, Dr. Ng says. Some potential advantages of using immunotherapy early in treatment rather than as a second-line, late-stage option are 1) the presence of an immune system that has not yet been compromised with chemotherapy, 2) a low-burden of possible distant disease that would need to be cleared, and 3) the presence of the original tumor which could act similar to an in-situ vaccine that would then be surgically removed after the immune system is primed to recognize it and target any circulating cancer cells.

“We’re adding immunotherapy to the standard of care, so we’re not denying any patients the standard of care — we’re adding something that will hopefully have beneficial effects,” Dr. Ng says. “The main goal long-term is to decrease the rate of distant metastases because up to 50% of these patients will succumb to metastases even if we successfully treat the tumor in its primary location. Finding something to prevent or to cure soft tissue sarcoma metastases is one of the holy grails in orthopaedic oncology.” +



Orthopaedics appointments can be made by calling **410-448-6400**. For information about the clinical trial, please call **410-328-6465**.





# NEW LEADERSHIP IN DERMATOLOGY



## THOMAS J. HORNYAK, M.D., PH.D.

Thomas J. Hornyak, M.D., Ph.D., an internationally recognized physician-scientist in pigment cell biology, melanoma and skin cancer, has been named the new Chairman of the department of dermatology at the University of Maryland School of Medicine. He will also be the Dr. Joseph W. Burnett Distinguished Professor.

Dr. Hornyak is widely published in the field of melanocyte stem cells and melanocyte differentiation. An academic leader in his field, he was recently elected President of the PanAmerican Society for Pigment Cell Research (PASPCR). He has a medical degree and a doctorate degree in Biological Chemistry, both from the University of Michigan. He was an intern in the Department of Medicine at New York Hospital — Cornell University Medical Center from 1992 to 1993; a resident in the department of dermatology at New York University Medical Center from 1993 to 1996; an instructor at the Ronald O. Perleman department of dermatology at New York University Medical Center from 1996 to 1998; and a Postdoctoral Fellow at the Howard Hughes Medical Institute of New York University Medical Center from 1995 to 1998.

Following that, he spent four years at the Henry Ford Health System, with an academic appointment as Assistant Professor of Dermatology at Case Western Reserve University in Cleveland. From 2003 to 2011, he was an investigator in the Dermatology Branch, Center for Cancer Research at the National Cancer Institute. In 2011, he became Associate Professor of Dermatology, and Biochemistry and Molecular Biology at the University of Maryland and Chief of Dermatology at the Baltimore Veterans Affairs Medical Center. He currently holds an NIH RO1 grant and a VA Merit Award. Dr. Hornyak has authored or co-authored 26 peer-reviewed articles and eight book chapters.



## ZAINEB MAKHZOUMI, M.D., M.P.H.

In addition, Zaineb Makhzoumi, M.D., M.P.H., an assistant professor of dermatology and skin cancer surgeon, has been named the department's Chief of Clinical Services. Dr. Makhzoumi is a specialist in Mohs Micrographic Surgery and procedural dermatology. Her research focuses on development of skin cancers in organ transplant recipients. She has a Master of Public Health degree from The George Washington University and a medical degree from the University of Maryland School of Medicine. Her residency was completed at the University of Virginia, followed by a fellowship in Mohs Micrographic Surgery at the University of California San Francisco.

Dr. Hornyak and Dr. Makhzoumi will work on developing the Program in Cutaneous Oncology, a research and clinical program at the University of Maryland Marlene and Stewart Greenebaum Comprehensive Cancer Center (UMGCCC) that treats patients with both melanoma and nonmelanoma skin cancers and conducts clinical research. +



The department of dermatology can be reached at **410-328-5766**.

# FOCUSING ON RETINOPATHY OF PREMATURITY WITH PEDIATRIC OPHTHALMOLOGY

| CONT'D FROM P7

## LASER THERAPY REMAINS MAINSTAY

Only about 10% of preemies diagnosed with ROP actually need treatment, since the disease tends to improve on its own in the vast majority of cases. Those with severe ROP, who are deemed at risk for blindness, are typically treated with retinal laser photocoagulation, a mainstay in use for the past several decades. This therapy burns away the periphery of the retina, which has no normal blood vessels; the caveat is that some peripheral vision can be destroyed in the process.

"We perform laser therapy on the undeveloped part of the retina to ablate tissue and prevent that tissue from releasing molecular signals that propagate retinopathy," Dr. Alexander explains. "Much of the time it halts the progression of ROP and it dramatically reduces the rate of retinal detachment."

Now University of Maryland ophthalmologists are participating in a cutting-edge clinical trial investigating a new medication that may serve as an alternative to laser therapy for some with advanced ROP. The drug, ranibizumab, is injected into the eye to prevent abnormal blood vessels from growing. University of Maryland is among only a handful of U.S. medical centers participating in the international prospective randomized multicenter effort directly comparing this option to laser treatment.

Young ROP patients are tracked for years beyond their initial diagnosis, with UMMC staff facilitating key referrals to help any children with impaired vision to reach their full potential, educationally and otherwise. In addition to ROP, premature babies



"ONE OF THE THINGS THAT SETS US APART IS OUR TEAM APPROACH. TOGETHER WITH OUR NURSING STAFF, WE REALLY TRY TO EDUCATE FAMILIES AND MAKE SURE THEY HAVE A COMFORTABLE EXPERIENCE."

- MORAN "RONI" LEVIN, M.D.

are also at higher risk of other eye problems, including strabismus or eye misalignment; amblyopia, or "lazy eye;" cataracts; and glaucoma. The latter two conditions often require surgery within the first few weeks or months after birth.

"We work closely with schools to ensure a child gets the resources they need to learn and do their best in the classroom," Dr. Alexander says. "This ranges from glasses and preferential seating to low-vision aids like magnifiers, closed caption computers and one-on-one aides."

## TEAMWORK ENHANCES FAMILY SUPPORT

Two experienced NICU nurses, Chris Mena and Kristin Williams, work closely with Drs. Levin and Alexander in both the hospital and clinic, enhancing the teamwork crucial to easing the path for often-overwhelmed parents of premature infants. To that end, Dr. Levin is also researching health literacy in ROP families, working to create a website and handouts about the condition that all levels can understand.

Other current University of Maryland research in the field is evaluating ocular blood flow in babies with ROP and the effect of blood transfusions on ROP in these infants.

"I think we're very unique in that we want to explore all aspects of ROP," Dr. Alexander notes. "We recognize the limitations in our understanding of this disease, both with its pathophysiology and in how we provide education and social support for families with ROP."

Dr. Levin adds, "One of the things that sets us apart is our team approach. Together with our nursing staff, we really try to educate families and make sure they have a comfortable experience, because the whole experience of having a premature infant with a potentially blinding disease is very stressful."

"Part of what is so incredible is you see these tiny babies in the NICU and we follow them for years. It's really rewarding to see them come back to the clinic healthy and growing and becoming just like every other kid," she says. "It's one of the most fun parts of the job for us, seeing the before and after." +



For more information about University of Maryland Eye Associates or to refer a patient, please call **667-214-1111**.

# UNIVERSITY OF MARYLAND SPINE NETWORK STREAMLINES APPROACH TO MAXIMIZE OUTCOMES

| CONT'D FROM P8

“Doing large, open procedures is fraught with risks such as longer hospital stays, greater pain, infection risks and the possibility of medical complications,” says Dr. Ludwig, who was named a “Top Doctor” in Orthopaedic Surgery: Spine by *Baltimore* magazine in 2016. “What minimally invasive surgery can do for a lot of spinal disorders is mitigate those risks. If we can achieve the same operative goals, then the patient wins in the end.”

## NETWORK GOALS INCLUDE TRACKING, SHARING DATA

The Spine Network was launched in late 2015 after UMMS leadership asked spine surgeons to collaborate with them on the venture. “I was very excited about the prospect,” Dr. Ludwig notes. “We all want to deliver the best care, and the thing I’m most excited about was that everybody reflects that notion.”

UMMS spine surgeons meet bimonthly to discuss the delivery of spine care within the network, homing in on data examining both hospital-based quality metrics and patient-reported outcomes. Patients are being closely tracked on measures such as length of hospital stay and readmission rates, which can help surgeons improve their approach over time, Dr. Ludwig says.

“We can look across the system and develop best practices so we know and can share data among our group,” he says. “We also have collaborative educational materials so patients are receiving a common message.”

Patient-reported outcomes measures will become a key element of the Spine Network, he says, and are already being compiled for cervical spine procedures. This data will help surgeons distinguish



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- STEVEN C. LUDWIG, M.D.

successful outcomes “on paper” from truly positive effects on patient quality of life.

“If you had a cervical fusion done at one of our hospitals and left in one day, with no complications, no Emergency Department visit and no readmission, you look on paper like a very successful patient,” Dr. Ludwig explains. “However, if you’re still having chronic pain, need pain medication and can’t go back to work ... a successful procedure doesn’t necessarily determine a successful outcome.

“We’re trying to do what other major medical systems do, by beginning to follow the quality of our work and how well patients are doing,” he adds. “As a physician, to me, that’s more important. It’s nice to get patients in and out of the hospital, but we’re in the business of making people better.”

## COLLABORATIVE VENTURE SETS UMMS APART

Since the majority of chronic back or neck pain patients can be successfully treated with nonsurgical measures, the Spine Network also focuses on availing them of the full spectrum of treatments, which also include medications, physical therapy or corticosteroid injections.

“Even though we do a lot of spine surgery, most people don’t need surgery,” says Dr. Ludwig, who oversees spinal surgery at UMMC, the R Adams Cowley Shock Trauma Center, the Baltimore VA Medical Center and the University of Maryland Rehabilitation & Orthopaedic Institute. “We have avenues to make sure patients get pointed in the right direction. We also do shared decision-making with surgeons, patients and families to figure out the best option for each person.”

Challenges surrounding the implementation of the Spine Network center around administrative hurdles, such as data collection, Dr. Ludwig says. But, “physician engagement is at its highest.”

“I don’t know of any other system working together collaboratively, analyzing data on a bimonthly basis, to try to improve the quality of care,” he says. +



For more information about the Spine Network, please visit [umms.org/spine](http://umms.org/spine).





PROFESSOR OF ORTHOPAEDICS, Steven C. Ludwig, M.D., has interest in disorders of the cervical spine and minimally invasive spinal techniques.

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