This past year has been very eventful for the Department of Urology at the U. We moved into brand new office space. The new space was completely remodeled and is still in the Mayo building, on the 5th floor but in a different location. All the faculty offices are now consolidated and this is the first major revamping of the office space for the department in over 30 years. We have a brand new conference room and invite you to join us for our conferences and journal clubs. Our clinical volume is continuing to grow rapidly and we witnessed a growth of >10% last year. Dr. Josh Bodie completed his fellowship training in infertility with Dr. Jay Sandlow at Medical College of Wisconsin and is back to rejoin our faculty. We have added a clinical PA-C Kate McKenzie to our ranks and she is focused on general urology as well as working with Drs. Nakib and Elliott for urodynamics. We have (continued on Page 2)

Farewell, Dr. Monga!

Dr. Monga has started at his new position at Cleveland Clinic as director of the Steven Strem Center for Endourology and Stone Disease.

This fall the Department of Urology bid farewell to one of its most esteemed doctors. Dr. Manoj Monga has started a new position at the Cleveland Clinic in his specialty area treating kidney stones. He is now the director of the Steven Strem Center for Endourology and Stone Disease at the Cleveland Clinic.

Dr. Monga was formerly the director of the Fairview Kidney Stone Institute here at the University of Minnesota and was also a Joseph Sorkness Family Endowed Professor of Urologic Surgery. He was also selected for the AUA Leadership Program last year.

The University of Minnesota Department of Urology bid adieu to Dr. Monga in style with a party featuring the band of Dr. Monga and Dr. Sweet (see photo below). We are very proud of Dr. Monga for this new opportunity. Dr. Monga’s advanced skills, leadership, and dedication to the field of urology will be greatly missed by all in our department.

Dr. Monga and Dr. Sweet (at keyboard) jam at Dr. Monga’s goodbye party.
Departmental Message (cont. from Page 1)

opened a brand new center for video-urodynamics and assessment of bladder/pelvic floor dysfunction which is jointly used by Urology, Physical Medicine and Rehabilitation and Radiology. It is located on the second floor of PWB and provides easy access and a separate exclusive environment for the care of these patients. We are also continuing to develop our active surveillance/local therapy program in prostate cancer. We are well along in our enrollment of patients into our active surveillance cohort and have acquired the technology for MRI guided prostate biopsy and upgraded ultrasound. We have a number of clinical trials that are either open or in the process of being opened for patients with prostate, bladder and kidney cancer including two co-operative group trials from CALGB for high risk prostate cancer and advanced bladder cancer. In keeping with the national focus on providing high quality healthcare we are monitoring our outcomes and costs. The purchase of Crimson software by Fairview and the establishment of our own internal outcomes group have enabled us to be the pilot dept. for recording and reporting our clinical care quality. An example of care quality as captured through our existing system and based on commonly accepted benchmarks from AHRQ is shown in this newsletter and we will endeavor to provide such information to our patients and the general public. Lastly I must note with some sadness that we have had some faculty transitions with two of our excellent faculty members Drs. Monga and Lee moving on to do bigger and better things. Dr. Monga to the Cleveland Clinic and Dr. Lee to the Mankato Hospital of the Mayo Health System. We wish them well!

Our research enterprise is expanding through new funded investigators such as Dr. Zhang joining our ranks. Dr. Zhang is a mechanical engineer who is working with Dr. Gerald Timm in developing new devices for the study and treatment of urinary incontinence. He was recently awarded a R99/Pathway to independence grant from the NIH. The simulation center and the CREST, under the stellar leadership of Dr. Rob Sweet and Troy Reihisen are growing rapidly in terms of educational and research activity. They have garnered several new grants and industry partnerships. The SimPortal has just passed through another accreditation cycle with flying colors. Several simulation and educational tools developed and built by Dr. Sweet and his team has been selected for educational courses by the AUA and they are working on several high profile projects for the AUA and Dept. of Defense. Several researchers associated with the Dept and the Center for Prostate Cancer are collaborating on developing new diagnostic technologies such as endorectal MRI and MR spectroscopy as well as identifying alternative hormone therapies. We have also been working collaboratively with research scientists in the Dept. of Surgery on developing new therapeutic approaches to prostate cancer and have obtained some very interesting results with a new compound called Triptolide. We have established an outcomes research group and are engaged in a variety of high level analyses of complex national datasets examining outcomes from treatment as well as patterns of care of urologic cancers. A separate endowment fund and professorship have been established to further these efforts with support from philanthropy. Our dept. has 17 abstracts accepted to the AUA in 2011.

Our residents continue to perform extremely well. All three graduating Chief residents this year will be pursuing fellowships in Oncology, Reconstructive Urology and Incontinence/female urology. We just received news of our residency match and we matched three excellent candidates – one local, one from Tennessee and one from Philadelphia highlighting the broad geographic representation of our resident pool. We have an invigorated educational and innovative curriculum which incorporates significant amounts of simulation training for our residents. With the generous support of Dr. Gerald Ireland, we have established the Gerald Constance Ireland Memorial Lectureship which will enable us to invite a visiting professor for adult urology in the spring. We currently have a Pediatric visiting professor who delivers the Leo Fung Memorial lecture in the fall. The visiting professor events as well as the conferences of the department are open to the community and we invite their participation. Our high school orientation program is doing splendidly well thanks to the continued efforts of Mary Jo Hadler. We have had several educational visits from high schoolers and several requests. The program was featured in an article in the StarTrib in May 25, 2010.

We thank our voluntary faculty, supporters and donors who with their amazing generosity of spirit, time and wallet allow us to continue to grow and advance our mission of outstanding clinical care, research and education.
Dr. Yingchun Zhang, Research Associate of the Department of Urologic Surgery, has recently been awarded the NIH Pathway to Independence Award (K99/R00) for his research in Urinary Incontinence.

The Pathway to Independence Award (K99/R00) program was created to expand and sustain upcoming and talented NIH-supported independent investigators. The aim of this program is to “facilitate a timely transition from a mentored postdoctoral research position to a stable independent research position with independent NIH or other independent research support at an earlier stage than is currently the norm.” Dr. Zhang’s research works were proposed for 5 years in his K99/R00 proposal (2-year K99 phase and 3-year R00 phase), and a total budget of $903,040 was requested. This application was finally approved and funded by the NIH/NIDDK, and the project already started in August of 2010. Dr. Zhang’s research will focus on the specific changes associated with aging that cause the increase in prevalence of Stress Urinary Incontinence (SUI), a lesser defined problem than the association between aging and Urge UI. To address these issues, Dr. Zhang will employ a subject-specific pelvic modeling approach to develop a minimally invasive urethrovaginal support and urethral function assessment (UUFA) technique and create a female SUI profile to reveal the association between aging and SUI in women. Using this technique, they will be able to minimally invasively and quantitatively assess urethrovaginal support function and urethral fatigue in women which is not currently possible. In addition, the UUFA technique will further permit the investigation of specific changes associated with other UI risk factors such as childbirth, pregnancy, obesity, smoking, physical activity, diabetes mellitus, hysterectomy, pelvic floor injury, spinal cord trauma, neurological disease, chronic cough, and constipation in future studies.

Dr. Zhang’s research is concerned with the development of a patient-specific computational model of her/his pelvis from MR images to permit simulation studies to be performed that reproduce the symptoms of which the patient is complaining.

Dr. Zhang would particularly like to recognize Dr. Gerald Timm, his primary mentor, without whose help and support Dr. Zhang surmises he would not have received this award. Dr. Timm will continue to provide evaluation, guidance and mentorship toward Dr. Zhang’s career development and research progress throughout this project.

Dr. Zhang has a multidisciplinary scientific background in Mechanical Engineering, Electrical Engineering and Biomedical Engineering (BME) and his experience in advanced biomechanical and electrophysiological modeling of human organ systems has given him unique advantages in conducting interdisciplinary biomedical research in Urinary Incontinence. The Department of Urologic Surgery is very excited at the prospects of Dr. Zhang’s research and wishes him the best of luck on his upcoming project.

News and Achievements

Dr. Sean P. Elliott received the 2009 Journal of Urology Best Reviewer award and was honored at the annual AUA meeting in San Francisco.

Dr. Yingchun Zhang was awarded the NIH Pathway to Independence Award! (see above for story)

The Department of Urology conducted interviews for a Residency in Urology in November. Our faculty interviewed 46 of the most well-qualified applicants for the position.

There will be three new residents starting in Urology this coming July. We are happy to welcome Sean McAdams, Jeffrey Tomasini, and Joseph Zabell into the Urology residency service.
CREST Develops New Simulator

The Center for Research in Education and Simulation Technologies (CREST) at the university has recently designed and built a virtual reality (VR) simulator that was created to simulate photoselective vaporization of the prostate (PVP). As one prevalent symptom of benign prostatic hyperplasia is lower urinary tract blockage or occlusion, PVP gradually vaporizes tissue inside the prostate using laser energy. The objective is that a VR simulation of this endoscopic laser procedure will be ideal in training curriculum and will lead to enhanced clinical proficiency in the skill and thus, better clinical outcomes.

CREST’s model was built with components including anatomical models and variations, volumetric ablation and visualization, collision detection and contact modeling, tissue and fiber deformation, motion tracking and haptic rendering, as well as graphical rendering and special effects such as bleeding and vaporization. Furthermore, this VR simulator includes teaching tools such as a web/database module for integrated learning management, in addition to subtasks, quizzes, and tutoring.

This VR simulator was tested by more than 40 board-certified urologists this past spring at the annual American Urological Association meeting in San Francisco. Additionally, CREST has assembled an interdisciplinary team of experts in BPH to advise and review the simulator for system design, functional modules, and training curricula development. This project was sponsored in part by American Medical Systems®.

Left: Real surgical video of laser ablation and the fiber/probe, Right: Simulation of laser ablation and the fiber/probe