

>> A MESSAGE FROM THE CHAIR

2007 ended in a banner fashion for us here in Madison. While still basking in the glow of the new American Family Children's Hospital, we are charged that the construction of the new Interdisciplinary Research Complex (IRC) remains on track. I believe the IRC will change the pulse of our research programs, and move the School of Medicine and Public Health to new levels as a leading institution of learning and teaching.

This past fall we were all thrilled by the 2007 Uehling Lecturer, Dr. Louis Kavoussi from New York. Strong attendance and a brisk program were my main memories of the event. Kudos go to Dr. Sean Hedican, Tricia Maier and Terese Bailey, who really pulled us through this year's event. It was also great

to see David Uehling; he and Louise looked great, and they both appreciated the visit to Madison.

The program continues to move forward at a brisk pace. Dr. Timo Laurila, our oncology research fellow, finished his tour here. He and Dr. David Jarrard have excellent abstracts on the 2008 AUA program. Dr. Jarrard continues to lead our strong robotic initiative here at UWMC. Other urologists are now performing procedures as well. Our current endourology fellow, Dr. Sam Sterrett, has been a pleasure to work with thusfar. He is certainly impressed with the winters here compared to where he trained in Nebraska. He is most busy doing endourology, laparoscopy and robotics with us.

I must congratulate Dr. Kris Penniston, who was named 2008-2010 recipient of an AUA Foundation Scholarship. She will work with us in the Stone Unit evaluating quality of life and dietary management of recurrent stone disease. Please see her feature article in this issue. Dr. Wade Bushman has flourished as Departmental Vice Chair for Research. He has done a great job mentoring various faculty, from urology and other divisions of surgery. Finally, Dr. Dan Williams is taking on the andrology practice here at UW. This will be a great learning and teaching opportunity for urology, and please read his feature article. We look forward to a strong collaboration with the endocrinology section, as Dan will

work with the endocrine fellows as well as our own residents.

At the 2008 AUA, we will again have a strong representation from our group. Kudos to Dan Williams and Josiah Nelson, who together will present a unique study about infertility and urologists on the Internet in Orlando. All in all, we have at least 13 abstracts on the program. I will be lecturing on medical expulsive therapy in this year's plenary session on Sunday. I will also be presenting the meeting's annual surgical stone course with Drs. John Denstedt (Canada) and Ojas Shah (New York). We will of course have our Alumni Reception on Sunday night in Orlando. Please check for later announcements. This year's event is sure to be a success! **WU**

STEPHEN Y. NAKADA, MD
CHAIRMAN AND THE UEHLING
PROFESSOR OF UROLOGY

>> PROGRAM NEWS

2008-2009 RESIDENCY MATCH RESULTS

OREOLUWA OGUNYEMI, MD
David Geffen School of Medicine
at UCLA

LAUREN WAGNER, MD
University of Cincinnati College
of Medicine

>> NEW INITIATIVES IN WISCONSIN

WHAT'S NEW IN ANDROLOGY?

DAN WILLIAMS, MD
ASSISTANT PROFESSOR

Andrology is the science and medicine of male reproduction. Although in the past medicine has often overlooked the male when treating infertility, it is known that a male factor is involved in approximately half of infertile couples. By integrating treatment of the male with that of the female, we can offer a unique program to treat reproductive dysfunction.

Services offered by urologists trained in andrology include full medical evaluation of the male, evaluation and treatment of endocrine (hormonal) dysfunction, microsurgical repair of anatomic problems (microsurgical varicocelectomy, vasovasostomy and epididymovasostomy), treatment of ejaculatory failure by electroejaculation, testicular sperm extraction and cryopreservation, treatment of ejaculatory ductal obstruction, and treatment of immunologic male infertility.

At the 2007 meeting of the Society for the Study of Male Reproduction (SSMR), urologists and other male infertility scientists gathered to discuss new and controversial topics in andrology. Advanced reproductive age and the genetic basis of male infertility also drew much attention.

From 1970 to 2002, the average maternal age at first birth has increased from 21.4 to 25.1 years, while overall fertility rates decreased from 8.5% to 7.4%. In 2005, fertility rates in older age groups of women were at all time highs. Not surprisingly, the use of in vitro fertilization with intracytoplasmic sperm injection (IVF/ICSI) has skyrocketed. Factors associated with older age at first birth include higher income

and higher education. Despite these trends in the U.S., infant mortality rates are stable, which is a favorable statement of the state of this country's reproductive health.

Reproductive changes that occur with aging are not unique to women. Sperm quality in older men tends to exhibit decreased motility and concentration. Testicular changes include decreased volume, fewer Leydig and Sertoli cells, thickening of seminiferous tubules, and increased maturation arrest of germ cells. These findings lead to lower efficacy of spermatogenesis. Moreover, diminishing testosterone levels (1 to 2% per year) and the metabolic syndrome may also affect fertility.

Dr. Josiah Nelson (PGY-4) received the 2007 SSMR Men's Health Traveling Fellowship Program award. At the SSMR convention, he reviewed birth defects and genetic abnormalities in offspring of older parents. While the effect of male age on birth defects is less clear than female age, a synergism exists when both the man and woman are older. For example, when the mother is over 35 years old and the father is over 40, there is an increased risk of Down's Syndrome. Rates of autism and schizophrenia in fathers over 40 are 5.75 times higher than men under 30. Two percent of children born to men over 50 years old have schizophrenia, which is triple the incidence of children born to fathers in their early twenties. Sperm DNA damage and the number of sperm mutations increase with age, especially in men over 35. There is also increased IVF/ICSI failure with increased paternal age. Thus, appropriate counseling of couples to address issues related to advanced parental age is imperative.

Our understanding of the genetics of male infertility continues to grow. Since the cloning of the Y chromosome in the early 1990s, we have been able to identify genetic loci that are responsible for impaired spermatogenesis. Y-chromosome microdeletions are found in 10% of men with severe oligospermia and 20% of men with

non-obstructive azoospermia. Men with AZFb deletions will almost never have sperm on testis biopsy, a finding that is useful in pre-operative counseling.

Many well-recognized gene mutation or deletion syndromes can cause male infertility. Cystic fibrosis (CFTR) mutations are a particular concern in men with congenital bilateral absence of the vas deferens and other reproductive tract abnormalities. Diagnosis is challenging unless an extensive analysis is performed, as over 1300 mutations in the CFTR gene have been identified. Unfortunately, routine clinical genetics laboratories only check for 32 of the most common CFTR mutations.

Even in men with a normal karyotype, meiotic abnormalities may result in sperm aneuploidy (wrong numbers of chromosomes in the haploid sperm). This may be diagnosed with sperm fluorescence in-situ hybridization (FISH) analysis. FISH should be ordered for men with oligospermia and those with recurrent pregnancy loss (even men with normospermia). FISH can also be useful in screening high-risk couples prior to initiating an IVF/ICSI cycle.

Despite the known genetic approaches to diagnosing male factor infertility, there are many genetic defects that we cannot yet diagnose today. Because 80% or more of male-factor infertility may have a genetic basis, couples should undergo counseling to understand that for many infertile men, the tools for diagnosis are lacking, but the genetic defects causing the infertility can be transmitted to offspring.

While the current rate of idiopathic male infertility is usually quoted to be around 25%, it is assumed that this number will decrease with the advent of advanced genetic analyses. The next era of genetic advances will be to identify and understand specific gene mutations that lead to infertility and develop strategies to treat these abnormalities. **WU**

GREENLIGHT™ LASER PROSTATECTOMY

DAVID PAOLONE, MD
CLINICAL ASSISTANT PROFESSOR

The Division of Urology has added a new advance in the treatment of benign prostatic hyperplasia (BPH) with its experience with the GreenLight™ laser photoselective vaporization of the prostate (PVP). Members of the Division including David R. Paolone, MD, Andrew Graf, MD, and Daniel Williams IV, MD have been performing the procedure since February 2006 and have now done over 140 cases.

The procedure utilizes laser energy at a wavelength of 532 nm to vaporize obstructing prostate tissue in a nearly bloodless fashion. This wavelength is highly absorbed by oxyhemoglobin and minimally absorbed by water. This high absorption by hemoglobin results in tissue vaporization and a coagulation zone of only 1-2 mm in thickness. This shallow coagulation zone minimizes post-operative urethral edema and the irritative voiding symptoms that were seen in earlier laser treatments for BPH. Unlike patients undergoing a transurethral resection of the prostate (TURP), those having a PVP are typically able to go home the same day, and most patients require catheterization for no more than 24 hours. Many patients are even able to be discharged without a catheter. The procedure has been safely completed on patients taking anti-coagulants, including warfarin.

The Division's initial results with the procedure were presented at the 2007 Wisconsin Urological Society meeting. The mean size of glands being treated was 58.8 cc as measured by transrectal ultrasound. Mean catheterization time was 1.3 days, and 29.2% of patients were discharged without a catheter. Over 95% of patients who were on medical therapy for BPH prior the procedure were able to stop their medications after the procedure. Substantial improvements were seen in AUA symptom scores, maximum flow rates, and post-void residuals. Over 20% of the patients undergoing the procedure were in urinary retention, and nearly three-fourths of these

patients regained the ability to void on their own following the PVP.

The recent addition of a GreenLight™ 120 W laser has further enhanced the treatment of large glands. UW urologists have seen a significant decrease in the time needed to complete an effective PVP on both average size glands and the largest glands. I have performed 75 of these procedures and am now able to routinely treat glands over 100 cc in volume using the higher power system.

The Urology residents have gained extensive experience with the procedure as well. There is a relatively short learning curve for the procedure, and I have seen the residents become adept at PVP within ten cases. This is yet another way in which I feel that PVP compares very favorably with TURP.

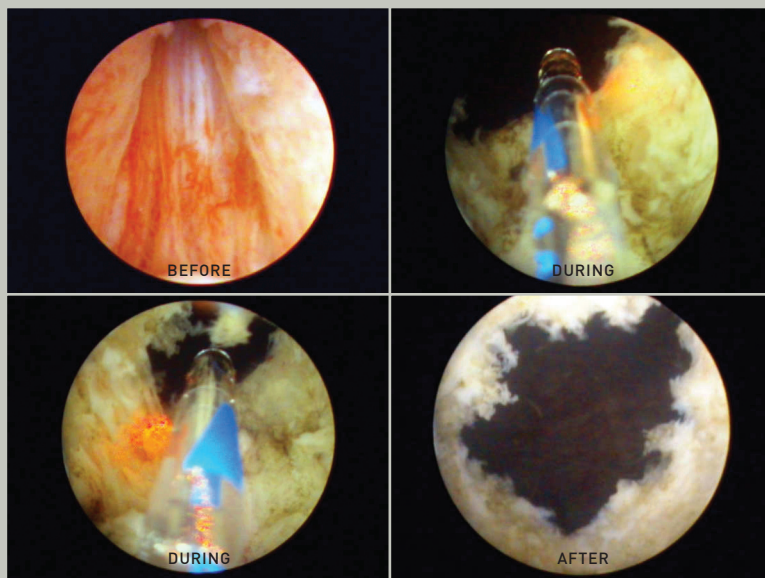
Recent studies have shown comparable early treatment results between TURP and PVP. Amongst the minimally invasive therapies for BPH such as transurethral microwave therapy and transurethral needle ablation of the prostate, PVP offers the unique advantage of creating a TURP-like defect in the prostatic urethra rather than relying on coagulative necrosis to relieve obstruction and ultimately symptoms. The GreenLight™ laser photoselective vaporization of the prostate promises to remain an effective outpatient treatment for BPH with an excellent side-effect profile and efficacy across a wide spectrum of symptom severity and prostate sizes. **WU**

2008-2009 ENDOUROLOGY FELLOW



DANIEL
KAPLON, MD

The Division of Urology is proud to announce that Daniel M. Kaplon, MD, will be joining the Division as our 2008-2009 Fellow in Endourology. Dr. Kaplon graduated Cum Laude with a BA in Biomedical Ethics from the University of Pennsylvania and received his medical degree from Pennsylvania State College of Medicine. He is currently serving as chief resident in urology at Brown Medical School where he's had the good fortune to train under the tutelage of Gyan Pareek, MD (University of Wisconsin, Fellow in Endourology 2004-2005). In addition to research in Endourology, Dr. Kaplon has also distinguished himself by participating in a number of excellent research projects in infertility and female urology. He will be joined in Madison by his wife Julia. **WU**



GREENLIGHT™ LASER TECHNOLOGY HAS IMPROVED
PATIENT RECOVERY TIME.

>> UPCOMING WISCONSIN EVENTS

TRICIA MAIER

● UW Alumni Reception

Sunday, May 18, 2008, 5:30-7:30 PM. We hope you will join us for this annual event. More information will be forthcoming on our Web site or you may call **Nancy Hawkins** at **608-263-1358** for location details.

● UW Faculty at the AUA

Dr. Stephen Nakada will be speaking in the Plenary Session on Sunday, May 18, 2008. He will be giving a State-of-the-art lecture entitled "Spare the Rod: Pharmaceuticals for Stone Passage".

Dr. David Jarrard will be moderating the Podium Session "Prostate Cancer: Epidemiology and Natural History" on Sunday, May 18, 2008.

Dr. Stephen Nakada has again been asked to participate in *Lunch with the Experts* speaking on endourology and laparoscopy on Sunday, May 18, 2008. These sessions allow attendees to ask questions and gain new perspectives in an informal setting with leaders in urology.

Dr. Stephen Nakada will be participating in the French-American session on urolithiasis on Sunday, May 18, 2008.

Dr. Stephen Nakada is Course Director for "Urolithiasis: Surgical Management: Percutaneous, Shock Wave Lithotripsy and Uteroscopy." This course offers the practicing urologist a comprehensive, case-based review of the surgical management of urolithiasis and will pay special attention to the prevention of complications. Dr. Nakada's course will take place Monday, May 19, 2008 from 6:00-8:00 a.m.

Dr. Stephen Nakada will be moderating the Podium Session "Stone Disease: Evaluation and Medical Management" on Tuesday, May 20, 2008.

UW Faculty with accepted abstracts for either poster or podium presentation includes

Dr. Wade Bushman, Dr. David Jarrard, Dr. Stephen Nakada and Dr. Daniel Williams, IV.

● 2008 Spring Urology Grand Rounds Visiting Professors

May 29, 2008

GERALD H. JORDAN, MD

Dr. Gerald Jordan will give a lecture on the subject of reconstructive urology. Dr. Jordan is a professor in the Department of Urology at Eastern Virginia Medical School and Director of the Devine Center for Genitourinary Reconstruction at Sentara Norfolk General Hospital in Norfolk, Va.

June 5, 2008

DAVID B. JOSEPH, MD

Dr. David Joseph will give a lecture on the subject of pediatric urology. Dr. Joseph is a professor in the Division of Urology at the University of Alabama-Birmingham and is Chief of the Section of Pediatric Urology.



JOHN A. LIBERTINO, MD

● 2008 Uehling Lectures

The University of Wisconsin, Division of Urology will be holding its annual David T. Uehling Lectures on October 17, 2008 at The Fluno Center in Madison, Wisconsin. Our keynote speaker is John A. Libertino, MD, Professor and Chair of Urology at Lahey Clinic Medical Center in Burlington, Mass. Please mark your calendars for this yearly event! **WU**

>> NOTABLE AND NEWSWORTHY

● Urology matched two absolutely outstanding residents for the 2008-2009 year! In a year where 62 percent of applicants to urology matched, Wisconsin is delighted to welcome **DR. OREO OGUNYAMI** from UCLA and **DR. LAUREN WAGNER** from the University of Cincinnati to the program.

● On behalf of the AUA Foundation and the AUA Office of Research, **DR. WADE BUSHMAN** has been selected to receive the 2008 Distinguished Past Scholar Award. This award is reflective of his accomplishments as a researcher, urologist and mentor of young scientists. Presentation of the award will take place at the Research Scholars Breakfast on May 20, 2008. Congratulations Dr. Bushman!

● Starting 2008, **DR. STEPHEN NAKADA** has been named Associate Editor for the journal, Urology. Dr. Nakada is the subspecialty editor for stone disease and minimally invasive urology.

He follows Dr. Ralph Clayman in that role with the journal.

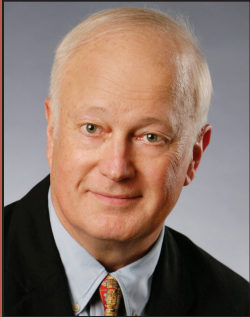
● **DR. WALT HOPKINS** was awarded an NIH grant titled "Role of E. coli virulence factors in chronic prostate infection and inflammation". Total award of \$395,850 for two years. If you would like more information, please contact Walt directly.

● **DR. GAURAV BANDI**, 2006-2007 Endourology fellow, won third place in the Endourological Society essay contest for his essay entitled, "Effect of hydrocortisone on porcine ureteral contractility in vitro" in the Basic Science Category.

● **DR. WADE BUSHMAN'S** lab was awarded an R21 grant for their work entitled "Anchorage Independent Culture of Prostate Stem Cells". This is a two-year award. **WU**

>> CLINICAL TRIALS IN WISCONSIN

"OVERACTIVE BLADDER" TRIAL STUDIES QUALITY OF LIFE



JOHN WEGENKE, MD
CLINICAL PROFESSOR

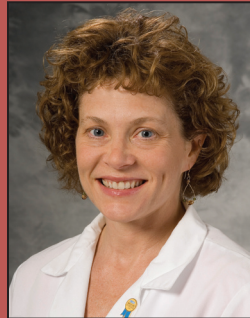
The term "overactive bladder" is a spinoff of the term overactive detrusor function, which was originated by the International Continence Society. The term overactive detrusor function describes a urodynamic finding of involuntary detrusor contraction during filling. Overactive bladder has been liberalized to refer to the medical condition of frequency and urgency, with or without incontinence.

Overactive bladder is felt to exist in 17 million to 33 million Americans and 50 million to 100 million people worldwide. This has encouraged development of several pharmaceuticals promoted to treat overactive bladder, and multiple claims have been made to distinguish one drug from the other.

A randomized, double-blind, placebo-controlled, parallel group, phase 4, multicenter study of VESicare (solifenacin succinate) in overactive bladder subjects is being performed to evaluate the symptoms of bother and health-related quality of life.

Subjects include male or female subjects 18 years of age and over, with at least three months of symptoms and predominant urge with or without incontinence. Patients interested in participation can contact Barbara Bowman at 287-2850. **WU**

AUA RESEARCH SCHOLAR AWARD



KRISTINA PENNISTON, PhD, RD
ASSISTANT SCIENTIST

In November I received a two-year post-doctoral fellowship training award from the American Urological Association (AUA) Foundation for my research proposal, "Medical Nutrition Therapy for Urolithiasis: Assessing Quality of Life Outcomes." I am grateful to my mentor, Division of Urology Chair Dr. Stephen Y. Nakada, and to others in the Division and the Department of Surgery for supporting my application.

PROJECT BACKGROUND

The project addresses the health-related quality of life of patients with recurrent kidney stones and whether nutrition therapy for stone prevention improves patients' quality of life. The health-related quality of life of stone formers has only recently been documented in a study we conducted among our own patients here at UW Health (Penniston and Nakada, *Journal of Urology* 2007;178: 2435-2440). Stone disease is a chronic disease that may afflict an individual repeatedly during his or her lifetime, frequently resulting in pain, surgical and medical interventions, disruptions to work and family life, and, less commonly, kidney damage. Yet, in contrast to other chronic diseases which have been studied with respect to quality of life, stone disease remains largely uncharacterized. While surgical

interventions for stone removal have become less invasive over the years, resulting in reduced hospital stays and less pain to patients, long-term complications of even these newer techniques are now appreciated. Thus, the "cure" for stone disease has a price and is transient, at best, in many stone formers.

Prevention of stone disease via appropriate medical management may significantly reduce treatment costs as well as recurrence rates and associated morbidity. It may also result in greater patient satisfaction and quality of life. While the primary endpoint for treatment of urolithiasis has historically been a "stone-free" state, an outcome that may be especially relevant to patients is quality of life. As urolithiasis is rarely a fatal disease, interventions and disease management strategies that optimize patients' quality of life is important. Prevention of kidney stones with medical management is proven. Yet, patients' acceptance of and compliance with medical management – which may include nutritional changes, medications, or both – has not been well-characterized.

PROJECT AIMS

In order to understand if patients' quality of life is enhanced with medical, particularly nutritional, management, we will assess patients' attitudes towards and compliance with nutrition therapy for stone prevention. We will characterize the dietary patterns of stone patients and identify key nutritional factors that contribute most to prevention. We will follow-up on our recently-published quality of life research by expanding our assessment of patients' health-related quality of life with the end goal of developing a disease-specific tool that practitioners may use in assessing stone patients' health-related quality of life.

Funding for the fellowship commences in July 2008 and goes through July 2010. **WU**

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G5/339 CSC
600 Highland Avenue
Madison, WI 53792-3236

Paul O. Madsen, MD
Emeritus Professor

Timothy D. Moon, MD
Professor
Specialty: Prostate disease, laparoscopy
608-262-0475

David R. Paolone, MD
Assistant Clinical Professor
Specialty: Sexual dysfunction and general urology
608-287-2900

Bruce Slaughenhaupt, MD
Assistant Professor
Specialty: Pediatric urology
608-262-2691

David T. Uehling, MD
Emeritus Professor

John D. Wegenke, MD
Clinical Professor
Specialty: General urology
608-287-2900

Daniel H. Williams IV, MD
Assistant Professor
Specialty: Male infertility
608-262-2691

>> EDITORIAL STAFF

Stephen Y. Nakada, MD
Editor

Karen Williams
Editorial Assistant

Tricia Maier
Administrative Assistant

>> FACULTY

Stephen Y. Nakada, MD
Professor and Chairman of Urology
Specialty: Endourology, laparoscopy
608-263-1359

Reginald Bruskwitz, MD
Professor
Specialty: Prostate disease
608-263-9534

Wade Bushman, MD, PhD
Associate Professor
Specialty: Female urology
608-262-0759

Jason R. Gee, MD
Assistant Professor
Specialty: Urologic oncology
608-262-0759

Andrew K. Graf, MD
Assistant Clinical Professor
Specialty: General urology
608-287-2900

Richard A. Graf, MD
Assistant Clinical Professor
Specialty: General urology
608-287-2900

Sean P. Hedican, MD
Associate Professor
Specialty: Laparoscopy
608-262-0475

David F. Jarrard, MD
Associate Professor and Vice Chairman of Urology
Specialty: Urologic oncology
608-263-9534

John V. Kryger, MD
Associate Professor
Specialty: Pediatric urology
608-263-1358