Application Number
11-2012

Category
Non-Obstetric Clinical Research

Project Title
High-Frequency Endoluminal Ultrasonography for Staging of Upper Tract Urothelial Carcinoma

Principal Investigator
Surena F. Matin, MD, FACS
Title of Project:
High-Frequency Endoluminal Ultrasonography for Staging of Upper Tract Urothelial Carcinoma

What type of grant are you applying for (select one only)?
Educational: Basic Science: Clinical Research - Obstetrical/Gynecological: Clinical Research - X
Non Obstetrical/Gynecological: AIUM Member Number: 174688

Principal Investigator (last, first):
Matin, Surena F.

AIUM Member Status (select one) X Member Senior Fellow

Institution Name:
University of Texas M.D. Anderson Cancer Center

Institution Address:
1515 Holcombe Blvd.
Houston, TX 77030
Phone: 713-792-5024 Fax: 713-794-5824

Email: summatin@mdanderson.org

Signature of approving institutional personnel:

Print name and title: Melinda Cotton - Executive Director of Sponsored Programs

Name of department chair: Colin P. Dinney
Department chair email: Colmey@mdanderson.org
Department chair phone number: 713-792-3250

Signature of department chair:

Detailed budget for entire budget period:
From: 12-1-11 Through: 11-30-12 Submit Date: November 1, 2011

Personnel

<table>
<thead>
<tr>
<th>Name</th>
<th>Role on Project</th>
<th>Type Appt. (months)</th>
<th>% Effort on Project</th>
<th>Salary Requested (must follow NIH guidelines)</th>
<th>Fringe Benefits</th>
<th>Totals</th>
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<td>Surena F. Matin</td>
<td>PI</td>
<td>12</td>
<td>1%</td>
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<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Deepak Bedi</td>
<td>Co- I</td>
<td>12</td>
<td>1%</td>
<td>999</td>
<td>280</td>
<td>1,278</td>
</tr>
<tr>
<td>Raghu Vikram</td>
<td>Co- I</td>
<td>12</td>
<td>1%</td>
<td>999</td>
<td>280</td>
<td>1,278</td>
</tr>
<tr>
<td>Charles C. Guo</td>
<td>Co- I</td>
<td>12</td>
<td>1%</td>
<td>999</td>
<td>280</td>
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<td>Data Coordinator</td>
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<td>294</td>
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Totals

3,289 921 4,210

Equipment (Itemize by category - must be project specific; must be less than $1,000 per item)

Endoluminal ultrasound probe $1000.00

Travel (<$1,000 and must follow the AIUM travel policy) $290

Patient care cost
Inpatient $ 
Outpatient $

Other expenses (Itemize by category; no IRB costs)
Radiology charge for image interpretation ($150/reading x 30 patients) $4,500.00

Total funding requested $10,000.00
Information regarding host institution’s grant office (or office which will approve the funding agreement, receive checks and distribute the funds):

<table>
<thead>
<tr>
<th>Contact name: Melinda Cotten</th>
<th>Tax ID #: 74-6001118</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institution Address:</td>
<td>City:</td>
</tr>
<tr>
<td>1515 Holcombe Blvd.</td>
<td>Houston</td>
</tr>
<tr>
<td>Phone:</td>
<td>State:</td>
</tr>
<tr>
<td>713-792-3220</td>
<td>TX</td>
</tr>
<tr>
<td>Fax:</td>
<td>Zip Code:</td>
</tr>
<tr>
<td>713-794-4535</td>
<td>77030</td>
</tr>
<tr>
<td>Email:</td>
<td></td>
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<tr>
<td><a href="mailto:osp@mdanderson.org">osp@mdanderson.org</a></td>
<td></td>
</tr>
</tbody>
</table>

Please attach a short summary paragraph suitable for release to the general public if this application is chosen for funding:

The staging of ureteral and renal pelvic or upper tract urothelial carcinoma (UTUC) remains a diagnostic dilemma. Approximately 34-49% of patients may be understaged preoperatively. Biopsy and imaging are not always accurate owing to limitations in the instrumentation, the relative ease of perforation of the thin muscular wall of the upper urinary tract, and the small size of these tumors. UTUC is a rare disease, and radical nephroureterectomy (or complete removal of the kidney and ureter) remains the gold standard therapy. Patients who are then found to have advanced cancers are referred for additional chemotherapy, but because of the removal of their kidney and loss of significant kidney function, the possibility of giving effective chemotherapy is significantly diminished. This disease is extremely lethal, as few patients with advanced disease survive beyond 3 years. Despite improvements in imaging and endoscopic technology, there has been no improvement in the survival of these patients in the past several decades. Therefore we currently are giving chemotherapy before surgery in patients considered at high risk of having an advanced cancer, which appears to be improving the results of treatment. In order to appropriately determine who benefits from chemotherapy prior to surgery and who can go on to surgery without any other treatment, we need better ways of assessing the stage of the cancer before kidney removal.

ELUS (endoluminal ultrasonography) represents a new diagnostic paradigm for the evaluation of thoracic, vascular, and gastrointestinal diseases. Despite the initial report of ELUS in the urinary tract in 1997, formal sonographic-pathologic correlation has not been done to validate this approach for UTUC, except for a small pilot study we recently published. In that study, 6 of 7 patients had accurate ELUS staging when correlated with the pathologic findings. The positive predictive value for invasion was 66.7%, and the negative predictive value was 100%. This represents the largest reported study for UTUC with sonographic-pathologic correlation, but is only limited by the small number of patients and lack of blinded evaluation. Thus to formally validate and expand on these findings we propose a study evaluating ELUS to not only determine if this modality can accurately stage patients with UTUC, but also to establish sonographic standards for image interpretation and disease assessment.

ELUS will be performed using existing, FDA approved equipment during the standard endoscopic evaluation of UTUC. Cine images (video) will be recorded, annotated and archived. Patients undergoing definitive surgery will have correlation of pathology findings to ELUS findings. The ability of ELUS to predict organ confined and non-organ confined disease will be determined using standard statistical tests. A lesion and site specific comparison of the sonographic and pathologic findings will be performed on the specimen.

This study will open up a new diagnostic tool to evaluate UTUC, a disease which has significant knowledge gaps and extremely limited diagnostic tools. Given the relative ease of this form of evaluation, the establishment of sonographic standards and the ability to predict stage of disease will introduce a new diagnostic paradigm that will improve the management of patients with this disease.

Submission Instructions – Send the following materials as a pdf to: education_research@aium.org (preferred method), or mail materials to: EER Grant Application, 14750 Sweitzer Lane, Suite 100, Laurel, MD 20707-5906.

Complete application should include:
- Application and Budget Form
  - A two to three page summary describing the proposed project addressing the criteria listed below. Number and identify each section as indicated:
    1. Objective: Specific aims of the project.
    2. Relevance: To the field of ultrasound.
    4. Methods: Experimental design to accomplish the aims of the project.
    5. Support: Facilities and equipment available at your institution needed for successful completion of this project.
    6. Bibliography: Relevant to the research - limit to one additional page.
- A statement of the responsibilities of each of the investigators and support personnel (on a separate page).
- An abbreviated, two page curriculum vitae for each investigator (NIH format is appropriate) including education and/or professional experience and pertinent bibliography.
- A page detailing current and prior grant support information.
- A letter of recommendation from an AIUM Fellow or Senior member, if applicable. If you are not an AIUM Fellow or Senior, you must submit a letter of recommendation from an AIUM Fellow or Senior. Visit www.aium.org for a complete list of AIUM Fellows and Seniors.
High-Frequency Endoluminal Ultrasonography (ELUS) for Staging of Upper Tract Urothelial Carcinoma (UTUC)

Short summary: The accuracy of ELUS for staging of UTUC will be determined by correlating ELUS findings with pathologic findings. Sonographic criteria for evaluation and determination of invasion will be documented and established.

PROPOSAL

Objectives
1. To determine the accuracy of endoluminal ultrasonography (ELUS) for staging of upper tract urothelial carcinoma (UTUC)
2. To establish sonographic criteria during the assessment of UTUC

Relevance: Determining the utility of ELUS for staging of UTUC and establishing sonographic criteria will have the following impacts:
1. Improved risk stratification of UTUC, a notoriously difficult cancer to clinically or radiographically stage, and
2. The introduction of a new paradigm for the sonographic evaluation of UTUC.

Background: The staging of ureteral and renal pelvic, or upper tract, urothelial carcinoma (UTUC) remains a diagnostic dilemma. Recent data have shown the prognostic value of ureteroscopic biopsy.\(^1\),\(^2\) However, even in these cases, approximately 34-49% of patients may be mis-graded or mis-staged preoperatively. Biopsy may be subject to sampling bias whereby foci of high-grade disease are missed.\(^3\) Cross-sectional imaging of UTUC also has notable limitations and is known to be subject to understaging.\(^4\) Ureteroscopy does not allow for resection of the full thickness of the ureteral or renal pelvic wall for diagnosis (as it can in bladder cancer), owing to limitations in the instrumentation and the relative ease of perforation of the thin muscular wall of the upper urinary tract. UTUC is a rare disease, and radical nephroureterectomy remains the gold standard therapy.\(^5\) Patients who are subsequently found to have locally advanced primary or nodal disease are referred for adjuvant chemotherapy, but these patients usually have significant loss of renal reserve owing to the removal of their kidney, precluding the effective administration of cytotoxic platinum-based chemotherapy.\(^5\)\(^-\)\(^7\) Thus with the shift in the current era toward neoadjuvant chemotherapy for those considered to be at high risk for relapse, adequate preoperative risk stratification has become paramount.\(^6\)\(^-\)\(^8\) ELUS represents a new diagnostic paradigm for the evaluation of thoracic, vascular, and gastrointestinal diseases.\(^9\)\(^10\) Despite the initial report of ELUS in the urinary tract in 1997, sonographic-pathologic correlation has only been done in 2 patients to the best of our knowledge.\(^11\) We have performed a pilot investigation and have recently published our initial results.\(^12\) Six of 7 patients had accurate ELUS staging when correlated with the pathologic findings. The positive predictive value for invasion was 66.7%, and the negative predictive value was 100%. This represents the largest reported study for UTUC with sonographic-pathologic correlation, but is clearly limited by the small number of patients and lack of blinded evaluation. Further evaluation and a validation of these findings are needed. We propose a study evaluating ELUS to establish sonographic standards for image interpretation and disease assessment and to determine if this modality can accurately stage patients with UTUC.

Methods: All equipment is currently available at our institution and is being used routinely, and we have an IRB approved protocol for the evaluation of these cases (DR10-0360). ELUS is performed by mechanical radial scanning at 20 MHz using a 1.7-mm (~5 French) diameter probe (UMG2029R3; Olympus Corp America, Orangeburg, NY) in B mode. This probe allows for placement over a guide wire, and it has a shielded continuously rotating transducer that provides radial images, with adjustable scanning depths of 2-12 cm. The images below show the following: probe with guide wire and
representative image of normal proximal ureter (row 1); ELUS images of a papillary tumor with corresponding endoscopic image (row 2).

Retrograde pyelography and ureteroscopy is performed to evaluate for multifocality and to confirm the location of the UTUC, which is correlated to the fluoroscopic images. The ureteroscope is withdrawn, and the ELUS probe passed over a guide wire under fluoroscopy to the location(s) of interest as noted fluoroscopically. The sonographic image gain, contrast, and time-gain compensation are adjusted to produce an anechoic signal for the surrounding fluid for optimal image acquisition. The imaging depth of field is also adjusted to obtain optimal viewing and resolution, usually at 2-3 cm. Video documentation of cine clips is performed in all cases onto a DVD. The video will include notation of the laterality and general location of the tumor; if multiple tumors are present, all will be documented with notation made of the index (largest) tumor. Two radiologists who are blinded to the endoscopic findings will interpret the sonographic images and cine clips. Standard landmarks such as the iliac vessels, psoas muscle and the renal vessels in the pelvis would be used for orientation. Disagreements between the 2 blinded evaluations will be resolved by consensus discussion and input from the PI when necessary. Any circumferential or eccentric thickening in the ureter would be noted. The integrity of the sonographically identifiable ureteral layers (inner mucosa and lamina propria, middle muscularis and the outer adventitia which appear as alternating hyper and hypoechoic bands) would be used to determine the depth of invasion when possible. Organ-confined disease is defined by tumor penetrating the adventitia or extending into the surrounding soft tissue. In addition, the location and size of the lesions would also be recorded. Criteria deemed essential for ELUS evaluation of the urinary tract would be determined by consensus between the investigators at the conclusion of the study.

Patients undergoing definitive surgery without neoadjuvant chemotherapy will have correlation of pathology findings to ELUS findings. The ability of ELUS to predict organ confined and non-organ confined disease will be determined using standard sensitivity/specificity analysis and area under the receiver-operating characteristic (ROC) curve analysis. A lesion and site specific comparison of the sonographic and pathologic findings will be performed on the specimen.
**Accrual:** We anticipate being able to evaluate the imaging in at least 30 patients over the course of 1 year, this should provide at least 20 who have definitive surgery without chemotherapy to have sonographic-pathologic correlation.  
**Statistical plan:** A sample size of 20 patients (10 with organ confined disease, 10 with non-organ confined) will yield 80% power with a 2-sided significance level of 0.05 to detect an area under the ROC curve of 0.83 as compared to an area under the ROC curve of 0.50. If the sample size is 5 patients with organ confined and 15 patients with non-organ confined, this will yield 80% power to detect an area under the ROC curve of 0.88, while 15 patients with organ confined disease and 5 patients with non-organ confined will yield 80% power to detect an area under the ROC curve of 0.86. The area under the ROC curve is a measure of the concordance of ELUS with pathology (NCCS Trial and PASS 2005, Hintze, J. 2004. NCSS and PASS. Number Cruncher Statistical Systems. Kaysville, Utah. [www.ncss.com](http://www.ncss.com), accessed Oct. 1 2011).  
**Support:** The University of Texas M. D. Anderson Cancer Center ranks as one of the most respected centers devoted to cancer patient care, research, education, and prevention. More than 15,000 employees share common commitment to its stated mission-the elimination of cancer as a significant health treat. Specialists in every relevant field combined talents and resources in unceasing efforts to attain this goal. As a result, M. D. Anderson Cancer Center has been ranked the #1 Cancer Center in The U.S. News & World Report for three years in a row. More than 800,000 cancer patients have been treated at M. D. Anderson Cancer Center since 1944. Today the medical staff sees more than 29,000 new patients each year and approximately 15,931 surgical procedures are performed annually. Last year, the hospital recorded more than 167,000 hospital patient days and more than 965,000 outpatient visits. UTMDACC has a dedicated IT department with over 50 professionals. The Department of Urology has access to the Division of Surgery’s supported network servers running Novel NetWare and Microsoft NT server for general file sharing and database management activities. The Division of Surgery and Institutional Information Technology personnel provide the maintenance for the network and daily desktop support. At both the institutional and departmental levels, information technology personnel are provided for maintaining and upgrading all computers, software and printers. The Department of Urology has appointed Dr. Matin as the lead subspecialist dealing with this disease, and all patients with this diagnosis are referred to him with the full support of all departmental faculty.  
**Clinical:** We have a total of 521 beds in all buildings, with an average occupancy of 100%. The Ambulatory Clinical Building (781,700 sq. ft, Mays Clinic) houses the Genitourinary Cancer Center (27,691 sq. ft.) and a 75-bed Ambulatory Treatment Center, and is the location where the proposed clinical research will take place. The centers are supported by Diagnostic Imaging services (including MRI, Interventional Radiology, General Radiology, PET/CT Imaging, General Ultrasound, and Nuclear Medicine). The Ambulatory Clinical Building accommodates more than 91,240 clinical visits annually. Approximately 75,000 images are recorded in the Diagnostic Imaging facilities in the building.  
**Offices:** Dr. Matin has an academic office of 118 sq. ft. in the Department of Urology located in the Cancer Prevention Building. The Cancer Prevention Building contains 385,957 sq. ft., and is located behind the Houston Main Building and is perpendicular to the Mays Clinic. Dr. Matin is supported by an administrative assistant available for administrative duties associated with this proposal, also located in the CPB. Dr Matin has computer/internet access, and a private line with voice mail, and a secure fax. Drs Vikram, Bedi, and Guo each have academic offices with separate administrative assistants who would be available for liason and other associated administrative duties. Internet and intranet access, personal desktop, and laptop computers. Drs. Vikram and Bedi have access to dome monitors are available for image interpretation. All have secure email, phone and fax lines.
Bibliography


Investigator Responsibilities and Support Personnel

Dr. Matin is the PI and will oversee all aspects of the study. In the Department of Urology he is supported by an Administrative Assistant, Research Nurses, and Data Coordinators. He is national faculty for the American Urological Association (AUA) Hands-On Ultrasound course and has had training for ultrasound teaching from the American College of Surgeons as well as the AUA. He has personally performed over 300 intraoperative renal ultrasounds, including image interpretation, as well as over 30 ELUS cases, the last several in simultaneous collaboration with Dr. Vikram.

Dr. Bedi is a Senior Member of AIUM and will be the senior collaborator on this study. He will be one of the two radiologists performing blinded image interpretation. He is supported by an Administrative Assistant and has support available from data coordinators and statisticians, and has access to all radiology imaging resources.

Dr. Vikram also specializes in ultrasonography and will be a collaborator on this study. He will be the other radiologist performing blinded image interpretation. He is supported by an Administrative Assistant, has support available from data coordinators and statisticians, and has access to all radiology imaging resources.

Dr. Guo is a staff pathologist who has subspecialty fellowship training in urologic oncology pathology and is the lead pathologist collaborating with Dr. Matin on building a tissue bank for UTUC. He will be performing pathologic evaluation of specimens. He will be performing pathologic evaluation of specimens and has access to all pathology resources.
BIOGRAPHICAL SKETCH

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2. Follow this format for each person. DO NOT EXCEED FOUR PAGES.

NAME
Matin, Surena F.

POSITION TITLE
Associate Professor

eRA COMMONS USER NAME (credential, e.g., agency login)
surmatin

EDUCATION/TRAINING
(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)

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<th>INSTITUTION AND LOCATION</th>
<th>DEGREE (if applicable)</th>
<th>MM/YY</th>
<th>FIELD OF STUDY</th>
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<td>Old Dominion University, Norfolk, VA</td>
<td>BS, Summa Cum Laude</td>
<td>6/1990</td>
<td>Biology, English Minor</td>
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<td>Cleveland Clinic Foundation, Cleveland, OH</td>
<td>Clinical Internship</td>
<td>6/1994</td>
<td>General Surgery</td>
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<tr>
<td>Cleveland Clinic Foundation, Cleveland, OH</td>
<td>Clinical Residency</td>
<td>6/1995</td>
<td>Urology</td>
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<tr>
<td>Cleveland Clinic Foundation, Cleveland, OH</td>
<td>Research Fellowship</td>
<td>6/2000</td>
<td>Research Fellowship (Tumor Immunology)</td>
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<tr>
<td>Cleveland Clinic Foundation, Cleveland, OH</td>
<td>Clinical Fellowship</td>
<td>6/2001</td>
<td>Laparoscopy and Endourology Fellowship</td>
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A. Personal Statement

I have an active clinical practice treating mostly patients with kidney cancer, upper tract urothelial cancer, and prostate cancer. My research efforts are founded on clinical research, yet I actively and substantively collaborate with other clinicians, radiologists, translational scientists and basic scientists as can be seen in my selected publications. My main focus lies in the thoughtful integration of minimally invasive management of cancer, and as an extension of this role I am Medical Director of the Minimally Invasive New Technology in Oncologic Surgery Collaborative Program at MD Anderson, a position that interacts with all surgical departments, in which I have been responsible for institutional purchasing of over $8,000,000 in surgical technology over the past 4 years. Achieving the thoughtful integration of minimally invasive surgery in urologic cancer requires, as a necessity, a better understanding of the disease before treatment, thus the important role of improved prognostication by linking genomic, proteomic, clinical, radiographic and pathologic data.

B. Positions and Honors

Positions and Employment
2002 -2007 Assistant Professor, Department of Urology, Division of Surgery, The University of Texas MD Anderson Cancer Center, Houston, TX
2007-present Associate Professor, Department of Urology, Division of Surgery, The University of Texas MD Anderson Cancer Center, Houston, TX

Other Selected Experience and Professional Memberships
2006-2009 Member, American Urological Association Renal Mass Guidelines Panel, Linthicum, MD
2008-present Member, Faculty Promotion and Tenure committee, Division of Surgery, The University of Texas MD Anderson Cancer Center, Houston, TX
2009-2010 Chair, Bylaws Committee, Society of Urologic Oncology, Board of Directors, Schaumburg, IL

Honors
2000-2001 Scholar, American Foundation for Urologic Disease
2001-2002 Scholars in Urology Award, Pfizer
2004-2005 Excellence in Teaching Award, Biomedical Engineering Summer Internship Program, The University of Texas M. D. Anderson Cancer Center
2010 Scholar, Academic Fellowship Exchange, American Urological Association /European Association of Urology
2011-2012 Best Doctors in America, Best Doctors
C. Peer-reviewed Publications (Selected from 102 peer-reviewed publications)


D. Completed Research

W81XWH-07-1-01 10 01 1/1/2007-1/1/2010
Department of Defense (DOD)
3T Perfluorocarbon-filled endorectal magnetic resonance spectroscopic imaging of prostate carcinoma
Role: Co-Investigator
BIOGRAPHICAL SKETCH

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2. Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

**NAME**
Bedi, Deepak G.

**POSITION TITLE**
Professor of Radiology

eRA COMMONS USER NAME (credential, e.g., agency login)

**EDUCATION/TRAINING** (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)

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<tr>
<td>Strathmore College, Nairobi, Kenya (London University)</td>
<td>GCE Advanced Level</td>
<td>8/1971</td>
<td>Biology, Physics, Chemistry</td>
</tr>
<tr>
<td>University of Nairobi, Nairobi, Kenya</td>
<td>MB, ChB (equivalent MD)</td>
<td>5/1976</td>
<td>Medicine</td>
</tr>
<tr>
<td>Kenyatta National Hospital, Nairobi, Kenya</td>
<td>Clinical Internship</td>
<td>7/1976</td>
<td>Internal Medicine and General Surgery</td>
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<tr>
<td>Oakwood Hospital, Dearborn, MI</td>
<td>Clinical Residency</td>
<td>7/1978</td>
<td>Diagnostic Radiology</td>
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<tr>
<td>Oakwood Hospital, Dearborn, MI</td>
<td>Clinical Fellowship</td>
<td>7/1981</td>
<td>Radiology: Computed Tomography &amp; Ultrasound</td>
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A. Positions and Honors

**Positions and Employment**

1983-1988 Assistant Professor, Radiology, The University of Texas Medical Branch, Galveston, TX
1988-1990 Associate Professor, Radiology, The University of Texas Medical Branch, Galveston, TX
1990-1995 Associate Director of Ultrasound, Radiology, Children's Hospital of Buffalo, State University of New York, Buffalo, NY
1990-1995 Clinical Associate Professor, Radiology, Children's Hospital of Buffalo, State University of New York, Buffalo, NY
1995-1997 Clinical Associate Professor, Radiology, Millard Fillmore Hospital, State University of New York at Buffalo School of Medicine and Biomedical Sciences, Buffalo, NY
1997-2002 Associate Professor, Department of Diagnostic Radiology, Division of Diagnostic Imaging, The University of Texas MD Anderson Cancer Center, Houston, TX
2002-present Professor, Department of Diagnostic Radiology, Division of Diagnostic Imaging, The University of Texas MD Anderson Cancer Center, Houston, TX
2006-present Director of Body Ultrasound, Department of Diagnostic Radiology, Division of Diagnostic Imaging, The University of Texas MD Anderson Cancer Center, Houston, TX

**Other Experience and Professional Memberships**

1983-present Senior Member, American Institute of Ultrasound in Medicine, Laurel, MD
2002-2004 Member, Quality Assurance/Quality Control Committee, The University of Texas MD Anderson Cancer Center, Houston, TX
2010-present Member, The Society of Uroradiology, Houston, TX

**Honors**

1969 Recipient of the President's Award of Kenya
1984 Honorable Mention, Radiological Society of North America
1985 Certificate of Merit, Radiological Society of North America
1999 Certificate of Merit, American Roentgen Ray Society
2001 Cum Laude, Radiological Society of North America
2002 Certificate of Merit, Radiological Society of North America
2003 First Place, American Institute of Ultrasound in Medicine/World Federation of Ultrasound in Medicine and Biology
2004 Certificate of Merit, European Congress of Radiology
B. Selected Peer-reviewed Publications (in chronological order) (Selected from 37 publications)


C. Completed Research

ID01-022 1/1/2001-1/1/2011
Ovarian SPORE Grant - Project 1
Use of the CA-125 algorithm for the early detection of ovarian cancer
Role: Collaborator
BIOGRAPHICAL SKETCH

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2. Follow this format for each person. DO NOT EXCEED FOUR PAGES.

NAME
Vikram, Raghunandan

POSITION TITLE
Assistant Professor

eRA COMMONS USER NAME (credential, e.g., agency login)

EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)

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<tr>
<td>J. N. Medical College Hospital, Belgaum, India</td>
<td>Clinical Internship</td>
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<td>Sri Jayadeva Institute of Cardiology, Bangalore, India</td>
<td>Clinical Residency</td>
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<td>Cardiology</td>
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<tr>
<td>J. N. Medical College, Belgaum, India</td>
<td>MBBS</td>
<td>12/1997</td>
<td>Medicine</td>
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<td>National Health Service Hospitals, Carmarthen and</td>
<td>Clinical Residency</td>
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<td>Internal Medicine</td>
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<tr>
<td>Birmingham, United Kingdom</td>
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<td>East Scotland Training Scheme, Edinburgh and Dundee, Scotland</td>
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<td>The University of Texas MD Anderson Cancer Center, Houston, TX</td>
<td>Clinical Fellowship</td>
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<td>Body Imaging</td>
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A. Personal Statement
I am an Assistant Professor in Diagnostic Imaging at the University of Texas MD Anderson Cancer Center. My main focus of clinical and research interest is in imaging urologic malignancies using all modalities including CT, MRI, ultrasound, fluoroscopy and PET CT. I maintain an active research portfolio in various aspects of urologic imaging including evaluation of renal sinus fat invasion of renal cell carcinoma on CT, evaluating imaging appearances of rare and unusual renal cell carcinomas, utility of PET CT in imaging. I am also interested in evaluating the clinical value of cutting edge and new imaging technology in improving pre-operative staging and post treatment monitoring in these patients.

B. Positions and Honors

Positions and Employment
2007-present Assistant Professor, Department of Diagnostic Radiology, Division of Diagnostic Imaging, The University of Texas MD Anderson Cancer Center, Houston, TX

Other Experience and Professional Memberships
2003-present Member, Radiological Society of North America (RSNA), Oak Brook, IL
2004-present Member, American Roentgen Ray Society (ARRS), Leesburg, VA
2004-present Fellow, Royal College of Radiologists (RCR), London, United Kingdom
2007-present Corresponding Member, European Society of Radiology (ESR), Vienna, Austria
2007-present Member, Harris County Medical Society (HCMS), Houston, TX
2007-present Member, Society of Uroradiology (SUR), Houston, TX
2009-present Member, Structured Reporting Template Development Subcommittee, Abdominal CT, Radiological Society of North America (RSNA), Oak Brook, IL
2010-present Member, American College of Radiology (ACR), Reston, VA
2010-present Member, Appropriateness Criteria Expert Panel for Uroradiology, American College of Radiology (ACR), Reston, VA
2010-2011 Member, Uroradiology Subcommittee of the Education Exhibits Committee, Radiological Society of North America (RSNA), Oak Brook, IL
2011-2012 Member, Panel on Urologic Imaging, American College of Radiology (ACR), Reston, VA

Honors
1991 Certificate of Merit, Pre-University Board - Karnataka, India
1993, 1994 Certificate of Merit, J. N. Medical College - Belgaum, India
2003 Pfizer Prize, Junior Doctors’ Scientific Forum, Ninewells Hospital and Medical School
2007 Cum Laude for Education Exhibit, Papillary renal cell carcinoma: radiologic-pathologic correlation and spectrum of disease, Radiological Society of North America
2009 Certificate of Merit, Mesenchymal neoplasms of the kidney in adults: imaging spectrum with radiologic-pathologic correlation, Radiological Society of North America

2009 Certificate of Merit, Spectrum of medication-induced complications in the belly: role of cross sectional imaging, and implications on management, Radiological Society of North America

2009 Certificate of Merit with Excellence in Design, Pathways of extra-pelvic spread of disease: imaging findings, Radiological Society of North America

C. Selected Peer-reviewed Publications (Selected from 27 peer-reviewed publications)

Most relevant to the current application


D. Research Support

None
BIOGRAPHICAL SKETCH

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2. Follow this format for each person. DO NOT EXCEED FOUR PAGES.

NAME
Guo, Charles Chuanhai

POSITION TITLE
Assistant Professor

eRA COMMONS USER NAME (credential, e.g., agency login)
guocc

EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)

<table>
<thead>
<tr>
<th>INSTITUTION AND LOCATION</th>
<th>DEGREE</th>
<th>YEAR(s)</th>
<th>FIELD OF STUDY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qingdao University Medical College, Qingdao, China</td>
<td>MD</td>
<td>1990</td>
<td>Medicine</td>
</tr>
<tr>
<td>Chinese Academy of Medical Sciences, Beijing, China</td>
<td>MS</td>
<td>1993</td>
<td>Endocrinology and Molecular Biology</td>
</tr>
</tbody>
</table>

Please refer to the application instructions in order to complete sections A, B, and C of the Biographical Sketch.

A. Positions and Honors

Positions and Employment
1993-1994 Research Fellow, Physiology, Institute of Basic Medical Sciences, Chinese Academy of Medical Sciences, Beijing, China
1994-1995 Postdoctoral Fellow, Neuroscience, Oregon National Primate Research Center, Portland, OR
1995–1998 Research Associate, Laboratory Medicine and Pathology, University of Minnesota Medical School, Minneapolis, MN,
1998–2001 Research Associate, Surgery and Cancer Biology, Duke University Medical Center, Durham, NC
2001–2005 Medical Residency, Anatomic and Clinical Pathology, New York University Medical Center, New York, NY,
2005–2006 Clinical Fellowship, Genitourinary Pathology, Johns Hopkins University School of Medicine, Baltimore, MD,
2006-Present Assistant Professor of Pathology, University of Texas M. D. Anderson Cancer Center, Houston, TX

Other Experience and Professional Memberships
1997-present Member, American Association for Cancer Research
2001-present Member, United States and Canadian Academy of Pathology
2001-present Fellow, College of American Pathologists
2005-present Member, International Society of Urologic Pathology

Honors
1985-1990 Academic Achievements, First Place, Qingdao Medical College
1990-1993 Academic Scholarship, Chinese Academy of Medical Sciences
1999 Armstrong Cancer Biology Award, Duke Comprehensive Cancer Center

B. Selected peer-reviewed publications

(Publications selected from 43 peer-reviewed publications)


**C. Research Support**

**Ongoing Research Support**

Pfizer
Research Grant Mathew (PI) 10/1/2007−present
Sunitinib, hormonal ablation and external beam radiation therapy for high-risk and locally advanced prostate cancer
Role: Co-Investigator

**Completed Research Support**

The University of Texas M.D. Anderson Cancer Center
New Faculty Start-up Grant **Guo (PI)** 7/1/2006–6/30/2010
Gene Translocation and other molecular markers in prostate cancer
The major goals of this project are to study the recurrent gene fusion in prostate cancer and to identify molecular markers that can be used to predict the patient’s outcome.
Role: Principal Investigator

The University of Texas M.D. Anderson Cancer Center
Institutional Research Grant **Guo (PI)** 7/1/2008–6/30/2010
The TMRSS2-ERG gene fusion in metastatic prostate cancer
The project is to identify the specific TMRSS2-ERG gene fusion transcripts that may be associated with metastatic prostate cancer.
Role: Principal Investigator
Current and Prior Grant Support

Dr. Matin

Completed
1. Principal Investigator, In-Vivo Molecular Assessment Of Cryoablation For Renal Cell Carcinoma, Protocol Number, 2000−2001 ($22,500/year)
2. Principal Investigator, Prospective Randomized Trial of Skin Adhesive Versus Sutures For Closure of 217 Laparoscopic Port Site Incisions, Protocol Number, 2000−2001 ($10,000/year)
3. Principal Investigator, Vascular Targeted Photodynamic Therapy for Renal Tumors: A Preclinical Feasibility Model, 02-03-02621, 2004 ($32,000/year)
4. Principal Investigator, Prospective Study of Health Related Quality of Life Outcomes for Patients with Renal Cell Carcinoma, National Kidney Foundation, 2005−2007, $100,000

Current

Dr. Bedi – No grant support

Dr. Vikram – No grant support

Dr. Guo

Completed
1. Principal Investigator, TMPRSS2-ERG gene fusion in prostate cancer, New Faculty Start-up Grant, The University of Texas M.D. Anderson Cancer Center, 7/1/2006–6/30/2009, $175,000 ($60,000/year)
2. Principal Investigator, 5%, Relationship of TMPRSS2-ERG gene fusion between primary and metastatic prostate cancer, Institutional Research Grant (IRG), University of Texas M.D. Anderson Cancer Center, 7/1/2008–6/30/2010, $50,000 ($25,000/year)

Funded
1. Co-Principal Investigator, 2 %, The Cancer Genome Atlas for Bladder Cancer, NIH/NCI, PI - Bogdan Czerniak, 5/1/2011–present, $ 118,000
2. Co-Investigator, 1%, Sunitinib, hormonal ablation & external beam radiation therapy for high-risk & locally advanced prostate cancer, Pfizer, PI - Dr. Paul Matthew, 10/1/2007–present, $123,553
Dear Ms. Campbell,

I am happy to write a strong letter of support for Dr. Surena Matin, who is submitting a grant application to the AIUM. I strongly support Dr. Matin’s application, titled: High-Frequency Endoluminal Ultrasonography for Staging of Upper Tract Urothelial Carcinoma. This grant, which plans to extend some of Dr. Matin’s earlier research (JUM 29:1277-84, 2010), has the potential to improve staging in patients with urothelial carcinoma. The proposed grant aims to determine the accuracy of endoluminal sonography in staging upper tract urothelial carcinoma. The grant also aims to establish sonographic criteria in staging upper tract urothelial carcinoma.

Dr. Matin, who is an associate professor of urology at MD Anderson Cancer Center, has developed a solid team of imagers and urologists to work on this project. I think that the project has practical aims, and I believe that this work can lead to improved patient outcomes. I am delighted to support this grant proposal.

Sincerely,

Gary J. Whitman, MD, FAIUM
Professor of Radiology and Radiation Oncology
The University of Texas MD Anderson Cancer Center