The University of Texas Graduate School of Biomedical Sciences at Houston



THE UNIVERSITY of TEXAS

Health Science Center at Houston



# MEDICAL PHYSICS GRADUATE PROGRAM ALUMNI NEWSLETTER

## July 2007

## From the Program Director:

I am pleased to provide you with the second issue of the *Medical Physics Graduate Education Program Alumni Newsletter*. We sent the first issue, which was very well received, one year ago to provide our alumni with updates on the Program. Keeping with the primary goals set forth in that issue, in this issue we have provided updates on our entering class, current trainees, new and retiring faculty members, and recent graduates. We have also provided highlights of information accumulated as we finalized our self-study documentation required as part of our upcoming CAMPEP reaccreditation review.

As you review the newsletter, I think you will agree that the Program has had another successful year. This is due, of course, to the efforts of the faculty, support staff, and students. I would like to particularly thank George Starkschall, Deputy Program Director, and the members of the Program Steering Committee. In addition, the efforts of Georgeanne Moore and the support staff who contribute many hours to the Program are gratefully acknowledged.

I hope you enjoy this second issue of the newsletter, and please don't hesitate to let me or Georgeanne know if you have suggestions for future issues!

### Ed Jackson

## Admissions Update:

We are pleased to report the results of another successful recruitment cycle. Furthering the trend of increased enrollment, we admitted a total of 10 trainees for Fall Semester 2007. Such successful recruiting, of course, requires the help from everyone involved in the Program, including the faculty, current trainees, Education Program staff, and the GSBS. Also, we note that alumni certainly continue to contribute to our recruitment by their recommendations. We extend our thanks to everyone who participated!

Recruitment Statistics for Admitted Trainees to the Medical Physics Program for the Last Ten Years:

Year	PhD Program	SMS Program
1998	2	2
1999	3	4
2000	2	1
2001	5	3
2002	5	4
2003	4	2
2004	4	2
2005	4	4
2006	6	5
2007	6	4

2007 Admitted Applicant Data for the Specialized Masters and PhD Programs:

Program	Verbal GRE	Quantitative GRE	Analytical GRE	GPA
SMS	558	773	4.0	3.6
PhD	578	792	4.4	3.6

## Members of the Incoming Class for Fall 2007:

### SMS in Medical Physics Program

Triston Dougall / University of Texas - Arlington Georgi Georgiev / Sofia University Ryan Grant / University of Texas - Austin Katie West / Duke University

### PhD Program in Medical Physics

Moiz Ahmad / University of Texas – Austin Douglas Caruthers / Washington University Cheuk Kai Hui / University of Arizona, UT - Austin Justin Mikell / University of Illinois Joshua Yung / Duke University Rui Zhang / Rice University

# **Recent Graduates:**

The following trainees completed their degree requirements in the 2006-07 academic year.

SMS in Medical Physics Program None to report

(MS)PhD Program in Medical Physics

MS

• Dustin Ragan / Continuing on for his PhD

PhD

- Nicholas Koch / Assistant Professor, Medical University of South Carolina, Charleston
- *Stephen Kry* / Instructor, UTMDACC, Houston, TX
- Rebecca Milman Marsh / Resident, UTMDACC, Diagnostic Imaging Physics Residency Program, Houston, TX
- *Christopher Nelson* / Instructor, Physicians Network, Houston, TX

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Jonas Fontenot (Mentor: Wayne Newhauser)

- Recipient of the Heavy Particle Therapy Research Graduate Student Travel Award, July 2007. (This award was established by a former graduate of the program.)
- Finalist in the AAPM John R. Cameron Young Investigators Competition for 2007

Stpehen Kry (Mentor: Mohammad Salehpour)

- ✤ Recipient of the Rosalie B. Hite Fellowship
- ✤ 2007 President's Research Scholar Award
- 2007 Sylvan Rodriguez / Cancer Answers Scholarship
- ✤ 2007 Sowell Huggin's Scholarship

Rebecca Marsh (Mentor: John D. Hazle)

 2005-06 Keck Center for Computational Biology

- Christopher Nelson (Mentor: George Starkschall)
   Recipient of the American Legion Auxiliary Award, Fall 2006
- Jennifer O'Daniel (Mentor: Lei Dong)
  ✤ Recipient of the 2007 Aaron Blanchard Award in Medical Physics

# New Program Faculty and Program Associates for 2006-07:

Clearly, the Program cannot succeed without the commitment of its faculty. We are happy to report that the following individuals have recently joined our Program faculty.

## Program Faculty

Sam Beddar, PhD, Associate Professor, Radiation Physics



*Research Interests:* 1) patient dosimetry and respiratory-gated radio-therapy for GI cancers, and 2) using respiration information to improve the localization of liver tumors.

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William Erwin, MS, Senior Medical Physicist, Imaging Physics



*Research Interests:* Quantitative gamma camera imaging; septal penetration, scatter and attenuation correction; iterative SPECT reconstruction; hybrid SPECT/CT imaging; yttrium-90 bremsstrahlung imaging; internal radionuclide dosimetry; radionuclide therapy treatment planning.

Michael Gillin, PhD, Professor and Deputy Chair, Radiation Physics



*Research Interests:* Clinical application of protons; clinical trials; information management; calibration of radiation beams.

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John Rong, PhD, Assistant Professor, Imaging Physics



*Research Interests:* Radiation dosimetry; medical image quality evaluation and measurement; computed tomography; and digital x-ray imaging.

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Donna Stevens, MS, Senior Medical Physicist, Imaging Physics



*Research Interests:* developing optimal imaging protocols for new scanning platforms, determining dose associated with scout (pilot or topogram) views, and investigating various methods of determining dose associated with CT systems having wider x-ray beams, such as volume CT.

#### Program Associates

Tina Briere, PhD, Instructor, Radiation Physics

Kyle Jones, PhD, Instructor, Imaging Physics

Ramaswamy Sadagopan, MS, Senior Medical Physicist, Radiation Physics

Sastry Vedam, PhD. Assistant Professor, Radiation Physics

# Farewell and Thank-you to Retiring Faculty Members:

The following individuals, who each made substantial contributions to the Program, recently left MDACC to pursue other interests or announced their retirement by the end of this academic year. We express our thanks to each of them for their years of service to both the institution and the Program.

José BenComo, PhD



Srikanth Mahankali, MD



# Medical Physics Program up for Reaccreditation by CAMPEP:

We thought you might be interested in the following information that demonstrates some of the significant changes that have occurred since our previous CAMPEP reaccreditation in 2002. These highlights were taken from the self-study recently submitted for CAMPEP reaccreditation review:

- appointment of a new Program Director, Dr. Edward Jackson, and transition of the administrative support from the Department of Radiation Physics to the Department of Imaging Physics,
- (2) growth in the number of program faculty (from 25 to 57), including 37 Program Faculty and 20 Program Associates
- (3) growth in the number of program students (from 27 to 33) resulting from additional funding sources and increase in program faculty,
- (4) improved coordination of curriculum and addition of new courses,
- (5) maintenance of 100% funding of PhD students and partial to full funding for all Specialized MS students even as the stipend levels increased an average of 27%,
- (6) expansion of the number of Specialized MS students enrolled per year (from 2 to 4) and number of PhD students (from 3-4 to 6), resulting in an average increase of 36% and 100% in the number of SMS and PhD students, respectively,
- (7) expansion of the number of graduates (MS and PhD) from an average of 4.4 per year (1997-2002) to the current level of 7.2 per year (2003-2007),
- (8) addition of the MS bypass option for students matriculating into the PhD Program without a thesis option MS degree,
- (9) expansion of the Program Steering Committee membership to include a nonmedical physicist (in addition to a biomathematics representative),
- (10) expansion of research opportunities, and additional research grant and sponsored research agreement support, in both the Department of Radiation Physics and the Department of Imaging Physics,
- (11) the opening of the state-of-the-art MDACC Proton Therapy Facility,
- (12) establishment of the M.D. Anderson Cancer Center Small Animal Imaging Facility,

which now houses 4.7T and 7.0T Bruker MR systems; specimen CT, microCT, and flat panel CT systems; gamma camera, SPECT, SPECT/CT, and microPET systems; faxitron specimen x-ray systems,

- (13) creation of the MDACC Department of Experimental Diagnostic Imaging, charged with the development of a wide range of molecular imaging capabilities,
- (14) start of construction of a 6-story *Center for Advanced Biomedical Imaging Research*, which will have a full floor assigned to Imaging Physics research programs and a fully equipped translational imaging facility (CT, PET/CT, PET, 3.0T MR) and an animal imaging facility,
- (15) substantial expansion of web-based educational capabilities based on a web server purchased and maintained by Program faculty members,
- (16) opening of the M.D. Anderson Cancer Center Mays Clinic/Ambulatory Clinical Building and the Cancer Prevention Building, containing substantial new resources in diagnostic imaging and radiation therapy as well as new classroom and office space, and connected by crosswalk to the main MDACC campus buildings,
- (17) opening of the M.D. Anderson Cancer Center *George Mitchell Basic Research Science Building*, which is connected to the main MDACC campus buildings and now houses the GSBS administration and its excellent classroom resources, including classrooms with full video/web conferencing capabilities,
- (18) receipt of a five year T32 training grant (Medical Physics Training Program in Imaging Guided Therapy) from the National Cancer Institute.

### GSBS Medical Physics Program Alumnus News

### Edward F. Jackson, Ph.D. (1990)

Dr. Jackson is the recipient of the 2007 UTMDACC William Randolph Hearst Foundations Faculty Achievement Award for Education, which will be presented to him at the 2007 Faculty Honors Convocation on November 1, 2007. Congratulations to Dr. Jackson on this well deserved achievement.

- - - Georgeanne R. Moore

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GSBS Medical Physics Program Trainee Presentation Information for the Upcoming Meeting in Minneapolis

	типсироиз			
	, 2007 Moderated Poster – Joint:			
Imaging for Therapy Assessment				
2:15-3:00 PM, Exhibit Hall C – area 3				
Blake Cannon	ROI – Based Response			
	Assessment Using Pre and Post –			
	RT <sup>18</sup> F-FDG PET/CT			
Sunday, July 22, 2007 General Poster Discussion –				
Imaging, 3:00 – 4:30 PM, Exhibit Hall C				
Renee	Dosimetric comparison of Planar			
Dickinson	and 3-dimensional Methods of			
	Anatomic Localization for Breast			
Renee	Improving the Accuracy of CT			
Dickinson	Topograms for Node Localization			
	in Breast Lymphoscintigraphy			
Sunday, July 22, 2007 General Poster Session –				
Joint, 3:00 – 4:30PM, Exhibit Hall C				
Chris Nelson	Uncertainties in Respiratory			
	Gating for Lung Tumors			
Sunday, July 2	2, 2007 Therapy General Poster			
	– 4:30PM, Exhibit Hall C			
Stephen Kry	A Monte Carlo Study of the Out-			
	of-Field Dose from IMRT			
Whitney	Linear Energy Transfer (LET)			
Bivens	Dependence of BANG® Polymer			
	Gel Dosimeters in Proton Beams			
Stephen Kry	Neutron Dose Equivalent at			
	Depth in a Phantom			
Sunday, July	22, 2007 Young Investigators			
Symposium				
Jonas Fontenot	Stray Radiation Exposure During			
	Proton Radiotherapy of the			
	Prostate: The Influence of the			
	Patient on Scatter and Production			

Monday July 23	2007 Therapy Scientific Session:		
Monday, July 23, 2007 Therapy Scientific Session: Clinical Measurement, 1:30 – 3:20 PM, Auditorium			
Scott Davidson	A Comprehensive Study on the		
	Heterogeneity Dose Calculation		
	Accuracy in IMRT Using an		
	Anthropomorphic Thorax		
	Phantom		
	, 2007 Imaging Scientific Session:		
	ation Protection, and Quality		
Alanna	12:00 Noon, Room L100J Pediatric Organ Dose		
McDermott	Measurements in Axial and		
Weberniou	Helical Multi-Slice CT		
Tuesday July 24	, 2007 Imaging Scientific Session:		
	graphy – New Developments and		
	80 – 3:00 PM, Room L100J		
William	Partial Volume Correction of		
Bradley	Lung Nodules Using PET/CT		
	, 2007 Therapy Moderated Poster		
	<u>y – Monte Carlo Dose Calculations</u>		
Scott Davidson	Benchmarking a Flexible Monte		
	Carlo Method (DPM) for Use in		
	Evaluating IMRT Treatment		
Wednesday, July	Planning Systems		
	25, 2007 Therapy Scientific Commercial Systems and Clinical		
	:00 – 12:00 Noon, Room M100F		
Susannah	Risk of Secondary Fatal		
Lazar	Malignancies from Hi-Art		
	Tomotherapy IMRT		
Thursday, July 2	6, 2007 Therapy Scientific Session:		
	, Treatment Techniques and		
Clinical Applications, 10:00 – 12:00 Noon, Room			
M100E			
Yoshi	Determining Optimal Respiratory		
Tsunashima	Gating Parameters for Passively		
	Scattered Synchrotron Based		
Thursday I - 0	Proton Irradiation		
	6, 2007 Therapy Scientific Session:		
Paige Nitsch	30 – 3:20 PM, Auditorium Assessment of CyberKnife's		
raige raisell	Heterogeneity Dose Calculations		
	Algorithm and Respiratory		
	Tracking System Using an		
	Anthropomorphic Thorax		
	Phantom		

## Some Highlights of New Home for UT-Houston Graduate School of Biomedical Sciences



Mitchell Basic Science Building, New Home of the GSBS



GSBS Library

**GSBS** Reception Area



GSBS Small Classroom

GSBS Computer Lab

## Selected 2007 GSBS Graduation Highlights



Nicholas Koch received his PhD Degree in Medical Physics at the same time his wife, Joanna Koch, received her PhD in another program



Rebecca Marsh received her PhD Degree in Medical Physics



Blake Cannon lines up to get the graduation program in motion



Adam Melancon listens intently as Dean Stancel speaks to the graduating class



Dr. Stancel welcomes family and graduates



Dr. White, Donna Stevens, MS, and Dr. Newhauser



Blake Cannon is all smiles as he receives the SMS in Medical Physics Degree

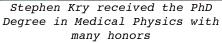


Adam Melancon shakes the hand of Dr. Stancel as he receives the MS Degree in Medical Physics



Dustin Ragan receives his MS Degree in Medical Physics







Jennifer O'Daniel smiles for the camera as she walks the stage to receive her PhD degree in Medical Physics



Christopher Nelson celebrates receiving his PhD Degree in Medical Physics with his family

Our sincere thanks to our alumni, current students, faculty, and staff for another successful year for the Medical Physics Program!