



MEDICAL PHYSICS GRADUATE PROGRAM ALUMNI NEWSLETTER

July 2006

From the Program Director:

We are pleased to provide you with this inaugural edition of the *Medical Physics Graduate Program Alumni Newsletter*. Our goal in establishing this newsletter is to provide our alumni and previous faculty members with regular updates regarding the program. Clearly, we are extremely proud of the program, its current and past trainees, and its current and past faculty. The contributions of each of you made this program one of the very best in the country and, as you will see in this newsletter, we are definitely continuing our previously established tradition of excellence in didactic, clinical, and research training and are, in fact, expanding the program in terms of the number of trainees, the breadth of the research and clinical training, and funding mechanisms. My personal thanks go to each of the faculty and staff members who continue to support the program. In particular, I wish to acknowledge the contributions of the Deputy Director, George Starkschall, and the members of the Program Steering Committee, Dianna Cody, Geoff Ibbott, David Followill, Jingfei Ma, Karl Prado, Richard Wendt, and Allen White. Finally, I must gratefully acknowledge the Executive Director of Educational Programs for the Department of Imaging Physics, Georgeanne R. Moore. Georgeanne's commitment to this program is phenomenal!

We hope you enjoy this initial edition of the newsletter. Please do let me or Georgeanne Moore know if you have any suggestions for future editions.

Sincerely,
Ed Jackson

Admissions Update:

As can be seen in the table below, the number of trainees admitted into the PhD and the Specialized

MS programs has grown in the past several years. The quality of the admitted trainees, as summarized by the GRE and GPA data for the 2006-07 entering class provided in the table below, is unquestionable. This growth has been made possible by the efforts of many committed faculty and staff members, the chairs of the departments of Imaging Physics and Radiation Physics, the continued health of the Robert J. Shalek Fellowship Fund, and the identification of additional funding resources, including institutional funding from M.D. Anderson. We have also recently received our first T32 Training Grant from the National Cancer Institute, and this grant will support 2 pre-doctoral and 3 post-doctoral trainees.

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

Year	PhD Program	SMS Program
1997	3	3
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

2006 Admitted Applicant Data for the Specialized Masters and PhD Programs:

Program	Verbal GRE	Quantitative GRE	Analytical GRE	GPA
SMS	572	696	4.2	3.44
PhD	658	735	4.8	3.62

Members of the Incoming Class for Fall 2006:

SMS in Medical Physics Program

Maria Bellon/University of Dallas

Jimmy Jones/Centenary College of LA

Nathan Pung/Michigan State University

Yevgency Vinogradskiy/U. of Michigan

John Zullo/University of Texas

PhD Program in Medical Physics

Blake Cannon/University of Texas @ Houston

Vorakarn Chanyavanich/McAlester College

Annelise Giebeler/CA State University

Jaelyn Homnick/CA Institute of Technology

Adam Springer/U. of Southern Mississippi

Ming Yang/Rice University

Recent Graduates:

The following trainees completed their degree requirements in the 2005-06 academic year.

SMS in Medical Physics Program

- ***Blake Cannon***/Defended MS thesis July 2006. Entering the PhD Program in Fall 2006.
- ***Ryan Hecox***/ Defended MS thesis July 2006. To begin work for Utah Valley Regional Medical Center, Provo UT, in September 2006
- ***Michael Bligh***/Defended MS thesis July 2006.
- ***Scott Davidson***/Entered the PhD Program
- ***Earl Gates***/Medical Physicist, Oncologics, Inc. in Lafayette, LA
- ***Kenneth Homann***/Jr. Medical Physicist, Baylor College of Medicine, Houston, TX
- ***Claire Nerbun***/Medical Physicist for South Carolina Oncology Associates, Columbia, SC
- ***Hilary Loupee Vass***/Busy with 1 year old daughter Kayla!


(MS)PhD Program in Medical Physics

MS

- ***Jonas Fontenot***/Continuing on for his PhD
- ***Robert Rodgers***/Deputy Chief, Radiation Protection Division of the United States Air Force
- ***Jason Shoales***/Associate Radiological Physicist, Scott & White Clinic, Temple, TX

PhD

- ***Dawn Cavanaugh***/Medical Physicist, US Oncology, Dallas, TX
- ***Jennifer O'Daniel***/Radiation Physics Resident, MDACC

Feedback from alumni is always welcomed by the Program! Please send all responses to gmoore@mdanderson.org. 

Honors and Awards for our Program Trainees for 2005-06:

Melinda Chi (Mentor: Tinsu Pan, Ph.D.)

- ❖ 4th Place Winner of the SWAAPM Young Investigator symposium, Spring 2006

Scott Davidson (Mentor: David S. Followill, Ph.D.)

- ❖ 3rd Place Winner of the SWAAPM Young Investigator symposium, Spring 2006

Kent Gifford (Mentor: John Horton, Ph.D.)

- ❖ 2005 Recipient of the Aaron Blanchard Award in Medical Physics

Ryan Hecox (Mentor: Geoffrey S. Ibbott, Ph.D.)

- ❖ 2nd Place Winner of the SWAAPM Young Investigator symposium, Spring 2006

Nicholas Koch (Mentor: Wayne Newhauser, Ph.D.)

- ❖ 2006 Recipient of the ACMP Graduate Student Award

Rebecca Marsh (Mentor: John D. Hazle, Ph.D.)

- ❖ 2005-06 Keck Center for Computational Biology Fellowship

Dustin Ragan (Mentor: Jingfei Ma, Ph.D.)

- ❖ GSBS President's Merit Award Renewal

Jason Shoales (Mentor: David Followill, Ph.D.)

2006 Recipient of the Aaron Blanchard Award in Medical Physics

New Program Faculty and Program Associates for 2005-06:

Clearly, the Program cannot succeed without the commitment of the faculty. We are happy to report that the following individuals have recently joined our Program. With the addition of these newest members, the faculty distribution is as follows:

Total Number of Program Faculty: 28

Total Number of Program Associates: 23

Program Faculty

Bijan Arjomandy, PhD, Assistant Professor, Radiation Physics



Research Interests: Proton dose verification, calculation and measurement for patient treatment and developmental techniques and measurements of small fields that are used for stereotactic (body) radiosurgery using 4DCT images and patch fields for treatment of patients.

Luc Bidaut, PhD, Associate Professor, Imaging Physics



Research Interests: Advanced biomedical imaging; multidimensional imaging; multimodality imaging; image segmentation; image registration; image guided therapy; interventional planning; quantitative imaging; positron emission tomography; molecular imaging and scientific visualization.

Kent Gifford, PhD, Instructor, Radiation Physics



Research Interests: Treatment planning QA and commissioning; brachytherapy; Monte Carlo methods; deterministic radiation transport and radiation dosimetry.

Thomas Guerrero, MD., Assistant Professor, Radiation Oncology



Research Interests: Medical imaging and radiation oncology. On the imaging side: deformable image registration algorithms and applications. On the radiation oncology side: development of imaging procedures that may be utilized in the radiotherapy treatment planning and to follow radiation injury to the lung after treatment.

Dragan Mirkovic, Ph.D., Assistant Professor, Radiation Physics



Research Interests: Numerical methods for radiation transport; numerical methods for image registration; computational physics and medical physics computational infrastructure.

Ramesh Tailor, Ph.D., Assistant Professor, Radiation Physics



Research Interests: QA in radiation therapy dosimetry involving both analytical and experimental work.

Program Associates

Jennifer Johnson, MS, Sr Medical Physics, Radiation Physics

Bryan Mason, MS, Sr. Medical Physics, Radiation Physics

Farewell and Thank-you to Recently Retired Faculty Members:

The following individuals, who each made tremendous contributions to the Program, recently retired. We cannot adequately express our thanks to each of them for their many years of service to both the institution and the Program.

William Hanson, PhD

John Horton, PhD

Isaac Rosen, PhD

The Specialized MS Program in Medical Physics:

Based on information received from some of our alumni, it was apparent to us that there was some misconceptions about the health and viability of the Program, particularly the Specialized MS Program. The following information summarizes the current status and recent changes in this important component of our training program.

For many years the Specialized MS Program has prepared a large number of very qualified medical physicists who have significantly contributed to the community of medical physicists in the State of Texas and in the rest of the United States and Canada as well. Graduates of our SMS program have continually been in high demand because of the quality of their educational background, their clinical training, and their overall work ethic. In the past few years, the SMS program has confronted several challenges that have caused graduates and friends of the program concern over the future of the program. We are happy to say at this point that we have confronted these challenges, and in addressing the challenges have made a program that we believe is significantly stronger, and will continue to be a reliable source of well-trained clinical medical physicists for the years to come. The purpose of this note is to identify for you these challenges and describe how we have overcome them. The first challenge confronted by the program has been a decrease in the available funding from the Shalek Fund for students in our program. For

many years, the Department of Radiation Physics has transferred surpluses from its Short Course program into the Shalek Fund. These surpluses have added at least \$20,000, and up to \$100,000, to the Shalek Fund during every two-year fundraising cycle of the Fund. Approximately two years ago, officials at The M.D. Anderson Cancer Center advised us that we could no longer transfer funds from the Short Course surplus to the Shalek Fund. Consequently, a significant source of revenue to support SMS students was no longer available to us.

The second challenge we have faced is a decrease in the research funding available to support SMS students. In the past, all SMS students have been fully supported by research funds after their first year of studies. In order to justify the allocation of research funding, student research projects tended to be quite extensive and lengthy to complete, and often had less direct clinical applicability than was desirable for a student whose primary professional intention was to go into clinical service. Based on the available funding and the available projects supported by this funding, for several years we were able to accept only two new students per year into the SMS program. Both faculty and students in the program believed this to be too small a number of students. Consequently, the program sought efforts to increase the number of students that could be accepted. Moreover, the present long-term goal of both the Department of Radiation Physics and the Department of Imaging Physics is to increase the level of research funding from peer-reviewed grants, primarily from organizations such as the National Institutes of Health, which tends to support relatively few clinically oriented projects.

In order to resolve these challenges, the program faculty last year adopted a resolution that beginning with students accepted for matriculation in the fall of 2005, full funding will not be guaranteed for students in the SMS program. At the same time the faculty adopted this resolution, efforts had begun to seek partial support for SMS students. We sought and received funding from M.D. Anderson's Office of the Senior Vice-President of Academic Affairs. This line-item budget approved by the Senior VP Office provided sufficient funding on an annual basis to provide approximately half of a stipend for each of four SMS students during their first year. To support students during their second year, both the Radiological Physics Center and the Department

of Imaging Physics have each made available a research assistantship for SMS students working on their theses. Short Course surpluses, now provided by both Departments of Radiation Physics and Imaging Physics, are able to provide partial support for two more second-year SMS students. We are now using the Shalek Fund to provide tuition and fees for four SMS students for two years of study in the graduate program. As a consequence of these funding changes, we anticipate we can accept, and at least partially fund, at least four students each year for the next several years. Additional students can be accepted into the SMS programs, but without any guarantees of funding. Moreover, because student funding is now detached from specific research grants and contracts, student projects can be much more clinically focused, which is consistent with the professional goals of the SMS students. Projects may also be more narrowly defined, with the intention that students can complete the SMS program in approximately two years.

***GSBS Distinguished Alumnus 2005-2006
Bhudat Paliwal, Ph.D. (1973)***



(Left) Peter Almond, Ph.D. Mentor, to Distinguished Alumnus 2005-06, Bhudatt Paliwal, Ph.D. (Right)

For the first time in the history of the Graduate School of Biomedical Sciences, a Medical Physics Program graduate was chosen as the GSBS Distinguished Alumnus. On behalf of our Program, we wish to congratulate Dr. Bhudatt Paliwal, who is an excellent representative of the program and the professional field of Medical Physics.



***GSBS Medical Physics Program
Trainee Presentation Information
for the Upcoming Meeting***

<i>Sunday, July 30, 2006 General Poster Session - Therapy 3-4:30 PM, Exhibit Hall F-1, Level 2</i>	
Scott Davidson	Heterogeneity Dose Calculation Accuracy in IMRT Using an Anthropomorphic Thorax Phantom
Jonas Fontenot	Dose Per Monitor Unit Determination for Proton Therapy Treatment Portals With and Without the Range Compensator
Malcolm Heard	Evaluation of the Spatial and Dose Resolution of a New 3D Polyurethane Dosimeter
Ryan Hecox	Dose Calculation Accuracy in the Presence of High-Z Materials using Megavoltage CT for Treatment Planning
Nicholas Koch	MC Simulations in Support of Developing and Testing an Analytical Dose Algorithm in Ocular Proton Therapy
Stephen Kry	Treatment Planning Study of Prostate Cancer IMRT with a Flattening Filter Free Accelerator
Chris Nelson	Estimation of Lung Tumor Setup Uncertainties using Bony Landmarks and Implanted Fiducials
<i>Sunday, July 30, 2006 General Poster Session -Joint: Imaging and Therapy; 4:45 – 5:30 PM, Exhibit Hall F-1</i>	
Whitney Bivens	Metrics for Assessment of Reproducibility of Respiratory Motion for Four-Dimensional Computed Tomography Imaging
<i>Monday, July 31, 2006 (MO-D-330A-7) Oral Presentation 2:54 PM, Room 330A</i>	
Michael Bligh	Implementing Quantitative Computed Tomography on Multi-Slice Scanners
<i>Tuesday, August 1, 2006 (TU-C-VALB-3) Oral Presentation 10:24 AM, Valencia B</i>	
Adam Melancon	The Dosimetric Impact of Intrafractional Motion on IMRT Treatment of Prostate Cancer
<i>Tuesday, August 1, 2006 (TU-C-VAL B-8) Oral Presentation 11:24 AM, Valencia B</i>	
Jennifer O'Daniel	Modeling Dose Delivery Accuracy of IMRT Head-and Neck-Cancer Treatment
<i>Tuesday, August 1, 2006 Moderated Poster, 4:00 – 4:45 PM, Exhibit Hall F-1</i>	
Mitch Price	Capabilities of a CT-Suitable, Patient-Adaptive HDR/PDR Intracavitary Brachytherapy Applicator for the Treatment of Cervical Cancer
<i>Wednesday, August 2, 2006 (WE-E-VAL A-2) Oral Presentation, 4:12 PM, Valencia A</i>	
Jennifer O'Daniel	Dosimetric Comparison of the No-Action-Level Alignment Protocol with Daily Alignment Techniques for Prostate Cancer
<i>Wednesday, August 2, 2006 (WE-E-224C-5)</i>	
Stephen Kry	Uncertainty Analysis of Risk of Secondary Fatal Malignancies from Radiotherapy

Highlights of the Fall Trainee Faculty Picnic

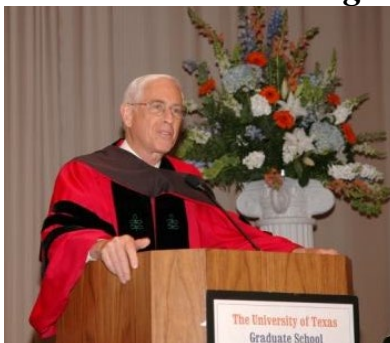
Dr. John Hazle and his wife, Dr. Deborah Hasse, once again open their home for the Annual Fall Trainee Faculty Picnic. There were over 70 trainee and faculty attendees from both the Department of Imaging Physics and Radiation Physics.



2005 GSBS Graduation Highlights



Dr. Followill as Student Marshal



Dr. Mendelsohn congratulates the graduates



Dean George Stancel awards the PhD in Medical Physics Degree to Aziz Poonawalla



Medical Physics Graduate, Malcolm Heard and his mother



Faculty Procession with Deputy Program Director, George Starkschall PhD; Program Director, Ed Jackson, PhD and Program Faculty Member, Isaac Rosen, PhD

2006 GSBS Graduation Highlights



Dawn Cavanaugh showing off her academic regalia after receiving her PhD Degree in Medical Physics



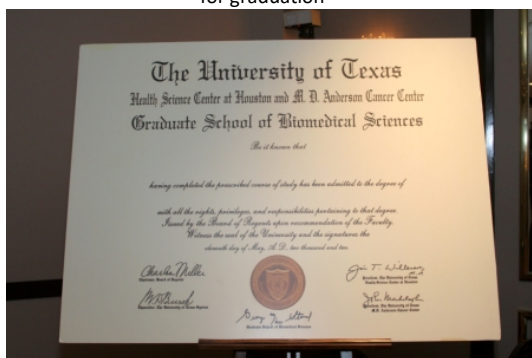
2006 Graduation Stage Party



Dr. Cody, mentor for Dawn Cavanaugh, rushes to get ready for graduation



Jason Shoales prepares to receive the MS in Medical Physics Degree



Dr. Jackson as he prepares to be the student marshal for 2006