

# COLUMBIA UNIVERSITY

IN THE CITY OF NEW YORK

DEPARTMENT OF APPLIED PHYSICS AND APPLIED MATHEMATICS

July 15, 2016

To: NEW Graduate Students in the Department of Applied Physics and Applied Mathematics

On behalf of the faculty and staff of the Department of Applied Physics and Applied Mathematics (APAM), I'd like to welcome you to the start of a new academic year. We have scheduled times when you can meet with a faculty advisor who will help you with the logistics of registration and program approvals. Please take the time to read the information below and plan to arrive at the specified times.

All new Medical Physics students **must** attend the APAM Department Orientation at **12:00 p.m on Tuesday, August 23<sup>rd</sup>, in room 210 Mudd, lunch will be provided.** You can register here <https://docs.google.com/a/columbia.edu/forms/d/e/1FAIpQLSeNGzGvxMYcjfXI4511zO8Wwk15OUrI3lHfbj9sA52pqALcIg/viewform>. A faculty advisor will be available to meet with students following the orientation session. **Please keep in mind that you will not be allowed to register for classes until Tuesday, August 30<sup>th</sup>, AND after you have met with a faculty advisor who has approved your course schedule for the semester.**

Your liaison in the APAM office is the medical physics program coordinator, Ms. Svitlana Samoilina. New students should contact Svitlana if they have any questions. Should Svitlana not be available, students may also contact the APAM student services coordinator Ms. Montserrat (Montse) Fernandez-Pinkley.

New medical physics students are **strongly encouraged** to attend the events of the School of Engineering and Applied Sciences (SEAS) Orientation on **Friday, August 19<sup>th</sup>**. You can register for the school-wide orientation by using this link: <https://www.eventbrite.com/e/grad-seas-welcome-day-fall-2016-tickets-23481377432>. And, if you haven't done so already, please consult the new student check-list for important information about the things you must do **before your arrival on campus** <http://welcomeday.gradengineering.columbia.edu/new-student-check-list.html>.

Please note that in addition to submitting a picture of yourself to the ID office online (information on how to do this is included in the new student check-list), we would also like you to send the Department your picture (it doesn't have to be the same one, but it can be; there are no formatting requirements for the department picture.) Please send pictures to [seasinfo.apam@columbia.edu](mailto:seasinfo.apam@columbia.edu) with the subject "New Graduate Student Picture."

Classes begin on **Tuesday, September 6th**. A list of the medical physics courses offered by the Department during the fall and spring is enclosed, along with a list of the faculty. If you have any questions, the staff in the Department office will be happy to help you.

Finally, I would like to let you know that during the fall and spring semesters on Fridays that classes are in session, an informal afternoon tea for all students is held at 3:00 p.m. In addition to our Friday teas, the Department hosts an "APAM Friday" social hour that takes place approximately once a month at 4:30 p.m. during the academic year, featuring free beer, soft drinks and snacks.

### Postscript

**English Proficiency:** Language proficiency is the responsibility of the student. English communication skills are of critical importance to your current and future academic and/or professional career.

**Housing:** Students who have been assigned to University housing should have already been informed and given instructions directly by the Housing Office. If you have not heard by now, please contact Ellie Bastani in the Office of Graduate Student Services (phone: 212-854-5379; email: [efb2123@columbia.edu](mailto:efb2123@columbia.edu)).

**Financial aid and FAFSA:** Unfortunately, at this time, Departmental Financial Aid is not available for Master of Science students. Graduate students (who are US citizens or permanent residents) desiring financial aid can complete the 2016-2017 FAFSA prior to the start of the fall term; you can apply online at [www.fafsa.ed.gov](http://www.fafsa.ed.gov). The school code to be used on the form is 002707. More information can be found at <http://gradengineering.columbia.edu/financial-aid-4> and <http://cc-seas.financialaid.columbia.edu/grad-seas>

**Immunizations:** New York State requires that all Columbia students show proof of immunity to measles, mumps and rubella. Documentation must be presented to the Columbia Health Services by July 30<sup>th</sup> or 30 days before registration, whichever is later. If you were admitted less than 30 days before registration, please submit your documentation as soon as possible, your ability to register will be on hold until your MMR documentation is received and processed.

**Meningococcal Meningitis Vaccination Decision:** New York State public health law requires that college and university students receive information from their institutions about meningococcal meningitis and the vaccine that protects against most strains of the disease that can occur on university campuses. Columbia students must make an informed decision about being vaccinated and certify their decision online <https://ssol.columbia.edu/ssv/crt/menIntro.html>. Full instructions are given online, and the process takes two to three minutes. Students must formally indicate their decision about being vaccinated before they will be permitted to register for classes.

**General Assistance:** After arriving in New York, new students are encouraged to contact the continuing graduate student listed below for answers to questions—academic or otherwise, directions, or friendly advice.

<u>FIELD</u>	<u>NAME</u>	<u>E-MAIL</u>
Medical Physics	Jason Moody	<a href="mailto:jfm2198@columbia.edu">jfm2198@columbia.edu</a>

I wish all of you success in your studies,



I. C. Noyan  
Chair, Department of Applied Physics and Applied Mathematics  
Co-Director, Medical Physics Program  
Professor, Materials Science and Engineering

**C O L U M B I A   U N I V E R S I T Y**  
**M E D I C A L   P H Y S I C S   P R O G R A M**  
**D E P A R T M E N T   O F   A P P L I E D   P H Y S I C S   A N D   A P P L I E D   M A T H E M A T I C S**  
*Faculty and Staff Academic and Clinical Research Interests*

**I. C. Noyan**, Professor (APAM) and Program Co-Director: x-ray and neutron scattering, radiation sources and detectors.

**Cheng-Shie Wu**, Professor (Radiation Oncology and APAM) and Program Co-Director and Professional Advisor, Director of Medical Physics (Radiation Oncology): 3-D gel dosimetry with optical-CT scanning, image-guided radiation therapy, Cerenkov radiation measurement, dosimetry for radiation-induced secondary cancer, microdosimetry, biophysical modeling.

**Howard Amols**, Senior Lecturer (Radiation Oncology); Attending Physicist and Service Chief Clinical Physics (MSKCC, Retired), past President, Fellow, and Lifetime Achievement Award Recipient (AAPM): intensity modulated and image guided radiation therapy, quality assurance for advanced technology radiation therapy

**John C. Arbo**, Associate (APAM) and Academic Advisor: radiation detectors, radiation transport, whole-body K40 counting, *in vivo* neutron activation.

**Peter D. Esser**, Professor *Emeritus* and Special Lecturer (Radiology).

**Klaus A. Hamacher**, Associate Professor (Radiology): molecular imaging (Nuclear Medicine, PET, Nuclear Cardiology), dosimetry, image processing, diagnostic medical physics.

**Sachin R. Jambawalikar**, Assistant Professor and Chief of Medical Physics (Radiology): fast magnetic resonance imaging techniques, quantitative mri techniques, diffusion imaging, relaxometry, arterial spin labeling and DCE pharmacokinetic analysis to evaluate their potential as clinical biomarkers for disease processes.

**Monique C. Katz**, M.D., Special Lecturer (APAM); Associate Professor of Clinical Radiology (Radiology, Retired): diagnostic radiology and radiographic image quality.

**Yongguang Liang**, Assistant Professor (Radiology): CT dosimetry and clinical protocol optimization, mammography, quality control assessment in medical imaging.

**Jerome A. Meli**, Adjunct Associate Professor (APAM): brachytherapy, dosimetry, clinical applications of brachytherapy.

**Thomas L. Morgan**, Adjunct Professor (APAM); Executive Director, RSP/CRSO: health physics; radiation doses to patients and staff in clinical settings

**Stephen L. Ostrow**, Adjunct Professor (APAM): radiological engineering; health physics; standoff detection of explosives, toxic chemicals, and nuclear materials.

**Lawrence N. Rothenberg**, Adjunct Professor (APAM), Associate Professor of Physics (Radiology, Weill Cornell Med. College, Retired), Clinical Member *Emeritus* (MSKCC), past President (AAPM): diagnostic x-ray image quality assessments, mammography and CT dosimetry, radiation protection.

**Anna Rozenshtein**, M.D., Adjunct Associate Professor (APAM), Director of Cardiothoracic Imaging (Westchester Medical Center): functional cardiac CT and MR, education, medical economics.

**Randy Yeh**, M.D., Assistant Professor (Radiology): use of radiopharmaceuticals in oncological imaging using PET and SPECT.

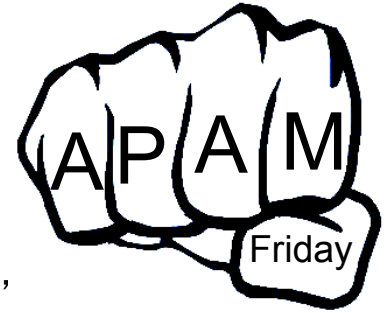
**Marco Zaider**, Senior Lecturer (Radiation Oncology); Attending Physicist and Head of Brachytherapy Physics (MSKCC); Professor of Physics (Radiology, Weill Cornell Medical College): medical physics, biophysical modeling, microdosimetry, quantum chemistry, radiation transport.

**Pat Zanzonico**, Adjunct Professor (APAM), Attending Physicist and Head of Small-Animal Imaging Core Facility (MSKCC): biomedical research on radionuclide-based methods for detecting and localizing tumor hypoxia, immune effector-cell trafficking, patient-specific dosimetry for radionuclide therapies, and small-animal and molecular imaging.

Columbia University  
 Department of Applied Physics and Applied Mathematics  
 Medical Physics Courses 2016-2017: 3-semester program

Course Registration		Points	Days/Time	Instructor	Room	Call Number
<b>Fall 2016 Term</b>						
APPH	E4010x	Introduction to nuclear science	3	Tu 6:30-9	Ostrow	TBA 71671
APPH	E4600x	Fund/rad. phys & rad. dosimetry	3	W 4:10-6:50	Meli	TBA 65003
APPH	E4710x	Radiation instrumentation lab, I (lab sessions: P/T students M after lecture; F/T students TBA)	3	M 5-10:00	Arbo	214 Mudd/174 Terrace 174 Terrace 27589
APBM	E4650x	Anatomy for physicists & engrs.	3	TuTh 4:10-5:25	Rozenstein/Katz	TBA 11085
<b>Spring 2017 Term</b>						
APPH	E4330y	Radiobiology for med. physicists	3	M 5:00-7:00	Zaider	TBA TBA
APPH	E6319y	Clinical nuclear medicine physics	3	Tu 7-9:30	Zanzonico	TBA TBA
APPH	E6330y	Diagnostic radiology physics	3	W 5:30-8:20	Jambawalikar/Liang	TBA TBA
APPH	E6335y	Radiation therapy physics	3	Th 5:30-8:20	Wuu	TBA TBA
APPH	E4550y	Medical physics seminar	0	Th 4:15-5:15	Arbo	214 Mudd TBA
*APPH	E4501y	Medical health physics tutorial	0	M-F 9-5	Morgan	TBA TBA
<b>Summer 2017 Term</b> *Two-week Medical Health Physics Tutorial, taken at the end of May Full-length Practicum(s) Comprehensive Exam, mid August					<b>No Summer Registration</b>	
<b>Fall 2016 Term (Fall 2016 for continuing students)</b>						
APPH	E4500x	Health physics	3	Th 6:30-9	Morgan	TBA 11845
APPH	varies	Practicums (two required):	6	varies		
	E6333x	Radiation therapy (prereq: E6335)		Wuu	TBA	72622
	E6340x	Diagnostic radiology (prereq: E6330)		Jambawalikar	TBA	64670
	E6365x	Nuclear medicine (prereq: E6319)		Esser	TBA	60324
	E6380x	Health physics (pre/coreq: E4501/E4500)		Morgan	TBA	11845
<i>Electives (3 points required):</i>						
APPH	E4711x	Radiation instrumentation lab, II	3	TBA	Arbo	62593
APPH	E6336x	Advanced radiation therapy	3	W 5:00-7:30	Wuu	TBA 61022
APAM	E6650x/y	Research project	1-6	varies	Staff	61142
APAM	E4999x/y	Supervised Internship	1-3	varies	Staff	
APPH	varies	3 <sup>rd</sup> Practicum	3	TBA	see above	

# APAM Friday Announcement



Please take the following survey:

Are you a new student?

Are you unsure what APAM is all about and how super sweet we are?

Do you want to experience the mind-blowingly awesome event that is “APAM Friday?”

Do you still need to learn what APAM Friday even is?

Do you want to get awesome?

If you answered “Yes” to any of the above questions, answered “No” to any of them, or didn’t even read them, you *need* to clear your calendar for **Friday, August 26th**, the semester’s first APAM Friday.

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According to the Oxford English Dictionary:

**APAM Friday** (ā’ pām frī’ dā) *noun*:

1. the departmental social hour that occurs one Friday every month for the Applied Physics and Applied Math Department at Columbia University
2. informal gathering of students, faculty, and administrators in room 200 Mudd
3. an event organized by grad students with free beer, snacks, and other delightful beverages to promote awesomeness
4. a time to meet and socialize with people within the Department, as well as get awesome
5. the talk of the town among the entire University as being the premiere jammy thrown by anybody, ever, in the history of the world.

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## Details

**What:** APAM Friday

**Where:** Room 200 Mudd

**When:** Friday, August 26th, 4:30 pm

**Who:** YOU and the rest of APAM

**Why:** Because if you are reading this, then you are a new student, and you want to meet everyone in the department. Seriously, let’s throw down.