

**RARAF MICROBEAM TRAINING COURSE**  
**2014 PROGRAM SCHEDULE: May 19 - 21, 2014**  
**Nevis Laboratory, Columbia University**

Version 1

	SUN	MON	TUES	WED
	18-May	19-May	20-May	21-May
9:00		Course Opening	Daily Announcements	Daily Announcements
:15			Day Activities Review	Day Activities Review
:30		Faculty/Student Introductions	<b>MICROBEAM LAB. 2</b>	L6: Micronucleus Assay and $\gamma$ H2X Probes <i>C. Geard</i>
:45			Accelerator Start-Up	
10:00		Orientation/Safety	<b>MICROBEAM LAB. 3</b> D3: Cell Culture Techniques Cell Plating <i>M. Buonanno</i>	L7: Novel Single-Cell Analysis Techniques <i>G. Garty</i>
:15		L1: Why Microbeams? <i>D. Brenner</i>		L8: Probes for Single Cell Analysis <i>A. Bigelow</i>
:30		L2: Physics of Microbeams <i>G. Randers-Pehrson</i>		
:45				Coffee Break
11:00		Coffee Break	Coffee Break	Endpoints Discussions
:15		L3: Microbeam Facilities <i>G. Randers-Pehrson</i>	Experimental Protocol Review Final Check-up	L9: Micro Fluidic Sys. & Optical Tweezers <i>D. Welch</i>
:30				L10: In Vivo Models <i>B. Ponnaiya</i>
:45				Lunch Break
12:00		<b>RARAF Technical Tour</b> <i>S. Marino</i>	<b>MICROBEAM LAB. 4</b>	
:15			1. Microbeam Diagnostics and Irradiation <i>G. Randers-Pehrson</i>	
:30				
:45				
13:00		Lunch Break	Lunch Break	L11: 3D-Systems: Skin <i>S. Amundson</i>
:15				
:30		L4: Nuclear Effects, DNA Damage and Repair <i>C. Geard</i>	2 Single Cell Targeting and Cell Picking <i>G. Garty</i>	<b>Microbeam Facility Development:</b> Poster Stations PS1: X-Ray Microbeam, <i>A. Harken</i> PS2: Neutron Microbeam, <i>Y. Xu</i> PS3: UV Micro-spot and animal models, <i>A. Bigelow</i>
:45			3. Cell Staining <i>B. Ponnaiya</i>	
14:00		L5: Cytoplasmic Irradiation and Bystander Effects. <i>E. Azzam</i>		
:15		<b>MICROBEAM LAB. 1</b>		
:30		D1: Microbeam Irradiation and Foci Formation <i>A. Bigelow</i>		
:45				
15:00		Coffee Break	Run Debriefing Discussions	Coffee Break
:15				
:30		D2: Cell Culture Techniques: Petri Dish Preparation <i>M. Buonanno</i>		<b>Review of Beam Time Proposals</b>
:45		<b>Experiment Design/Planning</b> <i>M. Vazquez</i>	<b>Students as Users:</b> Experiment Design Beam Time Proposals	
16:00		General Discussions		
:15				
:30		Adjourn	Adjourn	General Discussions Course Evaluation
:45				Closing Ceremony and Issue Certificate of Completion
17:00				Adjourn
:15				
:30				
:45				
18:00				
:15				
:30				
:45				