LECTURE DAY 1, Sunday, July 18, 2004

09:00 (9 AM)	09:00 – 09:10	Welcome	Sickafus
	09:10 – 09:30	Welcome and Background on Sicily and Erice	Benedek
	09:30 – 10:10	Radiation Damage Theory I (radiation effects as multiscale phenomena with a general picture of the methodologies used to understand rad. damage)	Osetskiy
10:00 (10 AM)	10:10 – 10:40	Coffee Break	
	10:40 – 11:40	Radiation Damage Theory I cont.	Osetskiy
11:00 (11 AM)	11:40 – 12:00	Break	
12:00 (Noon)	12:00 – 13:00	Radiation Damage Theory II (interaction potentials; energy partitioning; examples of high and low energy interactions; recoil spectra; cascades; KP/NRT)	Stoller
13:00 (1 PM)	13:00 – 16:00	LUNCH	
14:00 (2 PM)			
15:00 (3 PM)			
16:00 (4 PM)	16:00 – 17:10	Atomistics in Metals (Frenkel Pair formation – influence of lattice structure on displacement threshold; interstitial crystallography - compare and contrast calculations (MD and molecular statics) and measurements)	Stoller
17:00 (5 PM)	17:10 – 17:30	Tea Break	
	17:30 – 18:40	Primary Damage in Displacement Cascades (modeling and simple theories with lots of examples and movies)	Osetskiy
18:00 (6 PM)	18:40 – 19:00	Break	
19:00 (7 PM)	19:00 – 20:00	Chemical Rate Theory Modeling (compare and contrast low-temperature and high-temperature theory)	Stoller
20:00 (8 PM)	>20:00	DINNER & MUSIC	

LECTURE DAY 2, Monday, July 19, 2004

09:00 (9 AM)	09:00 – 10:10	Radiation Enhanced Diffusion & Radiation Induced Segregation (introduction to RED, RIS, measurements and theory)	Was & Allen
10:00 (10 AM)	10:10 – 10:40	Coffee Break	
11:00 (11 AM)	10:40 – 11:40	Kinetic Monte Carlo (introduction to KMC)	Voter
	11:40 – 12:00	Break	
12:00 (Noon)	12:00 – 13:00	Accelerated Dynamics Techniques (introduction to TAD, etc.)	Voter
13:00 (1 PM)	13:00 – 16:00	LUNCH	
14:00 (2 PM)			
15:00 (3 PM)			
16:00 (4 PM)	16:00 – 17:10	Introduction to Defect Structures and Radiation Induced Structural Changes (inelastic and elastic interactions; planar and volumetric aggregates; ordering and disordering; other structural changes)	Kinoshita
17:00 (5 PM)	17:10 – 17:30	Tea Break	
18:00 (6 PM)	17:30 – 18:40	Radiation Effects for Various Particle Types (compare and contrast neutron, electron, proton, He and heavy ion irradiations; roles of dose, dose rate, and temperature parameters)	Was & Allen
	18:40 – 19:00	Break	
19:00 (7 PM)	19:00 – 20:00	Special Lecture: Connection between Nuclear Physics Experiments at Accelerators and Processes Occurring in Stars or During Nucleo-synthesis	Trautmann (Wolfgang)
20:00 (8 PM)	>20:00	DINNER	

LECTURE DAY 3, Tuesday, July 20, 2004

09:00 (9 AM) 10:00 (10 AM) 11:00 (11 AM)	09:00 – 10:10	Microstructural Evolution in Irradiated Metals (emphasis on measured effects, temperature dependence, composition, etc.)	Zinkle
	10:10 – 10:40	Coffee Break	
	10:40 – 11:40	Introduction to Defects in Insulators	Catlow
	11:40 – 12:00	Break	
12:00 (Noon)	12:00 – 13:00	Poster Session 1	Students
13:00 (1 PM) 14:00 (2 PM)	13:00 – 15:00	LUNCH	
15:00 (3 PM) 16:00 (4 PM) 17:00 (5 PM) 18:00 (6 PM) 19:00 (7 PM)	15:00 – 20:00	BEACH EXCURSION	
20:00 (8 PM)	>20:00	DINNER	

LECTURE DAY 4, Wednesday, July 21, 2004

09:00 (9 AM) 10:00 (10 AM) 11:00 (11 AM)	09:00 – 10:10	Phase Transformations I (introduction to crystalline-crystalline and crystalline-amorphous transformations; introduction to the modeling of transformation kinetics, etc.; relationship between irradiation effects and equilibrium thermodynamic properties)	Ossi
	10:10 – 10:40	Coffee Break	
	10:40 – 11:40	Ion Beam Mixing and Modification of Materials	Nastasi
	11:40 – 12:00	Break	
12:00 (Noon)	12:00 – 13:00	Phase Transformations II (continuation of topics from I)	Ossi
13:00 (1 PM) 14:00 (2 PM) 15:00 (3 PM)	13:00 – 16:00	LUNCH	
16:00 (4 PM) 17:00 (5 PM) 18:00 (6 PM)	16:00 – 19:00	Lab I	Selected Instructors
19:00 (7 PM)	19:00 – 20:00	Phase Transformations III - Amorphization (mechanisms in metals and semiconductors; electronic properties of amorphous phases)	Bernas
20:00 (8 PM)	>20:00	DINNER	

LECTURE DAY 5, Thursday, July 22, 2004

09:00 (9 AM) 10:00 (10 AM) 11:00 (11 AM)	09:00 – 10:10	Nanocluster Formation (via implantation and via electronic stopping; include nanostructure design via irradiation)	Bernas
	10:10 – 10:40	Coffee Break	
	10:40 – 11:40	Atomic Scale View of the Effects of Radiation-Induced Defects on the Mechanical Properties of Materials (large-scale atomic level dislocation dynamics)	Osetskiy
	11:40 – 12:00	Break	
12:00 (Noon)	12:00 – 13:00	Poster Session II	Students
13:00 (1 PM) 14:00 (2 PM) 15:00 (3 PM)	13:00 – 16:00	LUNCH	
16:00 (4 PM) 17:00 (5 PM) 18:00 (6 PM)	16:00 – 19:00	Lab II	Selected Instructors
19:00 (7 PM)	19:00 – 20:00	Computation Methods for Modeling Defects in Insulators	Catlow
20:00 (8 PM)	>20:00	DINNER	

LECTURE DAY 6, Saturday, July 24, 2004

09:00 (9 AM)	09:00 – 10:10	Radiation Induced Defects in Halides & Oxides (experimental observations)	Popov
10:00 (10 AM)	10:10 – 10:40	Coffee Break	
11:00 (11 AM)	10:40 – 11:40	Radiation Induced Defects in Halides & Oxides (theoretical approach)	Kotomin
	11:40 – 12:00	Break	
12:00 (Noon)	12:00 – 13:00	Modeling of Colloids in Fluorites and Oxides	Kotomin
13:00 (1 PM)	13:00 – 16:00	LUNCH	
14:00 (2 PM)			
15:00 (3 PM)			
16:00 (4 PM)	16:00 – 19:00	Lab III	Selected Instructors
17:00 (5 PM)			
18:00 (6 PM)			
19:00 (7 PM)	19:00 – 20:00	Optical & Scintillation Properties of Nonmetals I (wide band-gap crystals doped with rare earth ions as promising scintillator materials for radiation detectors)	Makhov
20:00 (8 PM)	>20:00	DINNER	

LECTURE DAY 7, Sunday, July 25, 2004

09:00 (9 AM) 10:00 (10 AM) 11:00 (11 AM)	09:00 – 10:10	Microstructures of Irradiated Ceramics (nucleation and growth processes; stability of defect clusters in oxides; effects of impurities; RIC, TSC and RIED and the formation of defect clusters in oxides under an electric field)	Kinoshita
	10:10 – 10:40	Coffee Break	
	10:40 – 11:40	Electric and Dielectric Properties of Irradiated Semiconductors and Insulators	Zinkle
	11:40 – 12:00	Break	
12:00 (Noon)	12:00 – 13:00	Poster Session III	Students
13:00 (1 PM) 14:00 (2 PM) 15:00 (3 PM)	13:00 – 16:00	LUNCH	
16:00 (4 PM) 17:00 (5 PM) 18:00 (6 PM)	16:00 – 17:10	Swift Heavy Ion Irradiation Effects I (track formation as a function of material type; models; techniques for imaging tracks)	Trautmann (Christina)
	17:10 – 17:30	Tea Break	
	17:30 – 18:40	Irradiation-Induced Stress Effects	Nastasi
	18:40 – 19:00	Break	
19:00 (7 PM)	19:00 – 20:00	Optical and Scintillation Properties of Irradiated Nonmetals II (VUV emitting and VUV excited materials for laser, scintillator and phosphor applications)	Makhov
20:00 (8 PM)	>20:00	DINNER	

LECTURE DAY 8, Monday, July 26, 2004

09:00 (9 AM) 10:00 (10 AM)	09:00 – 10:10	Swift Heavy Ion Irradiation Effects II (ion tracks as a structuring tool: etched tracks; micro- and nano-pores; tumor therapy)	Trautmann (Christina)
	10:10 – 10:40	Coffee Break	
11:00 (11 AM) 12:00 (Noon)	10:40 – 11:40	Swift Heavy Ion Irradiation Effects III (effects in complex oxides, e.g., flux-pinning, CMR, etc.)	Kumar
	11:40 – 12:00	Break	
	12:00 – 13:00	Radiation Effects in Nuclear Fuels I (today's fuels – UO_2 and $(U,Pu)O_2$)	Matzke
13:00 (1 PM) 14:00 (2 PM)	13:00 – 15:00	LUNCH	
15:00 (3 PM) 16:00 (4 PM) 17:00 (5 PM) 18:00 (6 PM) 19:00 (7 PM)	15:00 – 20:00	EXCURSION	
20:00 (8 PM)	>20:00	DINNER	

LECTURE DAY 9, Tuesday, July 27, 2004

09:00 (9 AM)	09:00 – 10:10	Mechanical Property Changes in Metals due to Irradiation	Zinkle
10:00 (10 AM)	10:10 – 10:40	Coffee Break	
11:00 (11 AM)	10:40 – 11:40	Microstructural Evolution in Metals II: High Dose Irradiation Effects (swelling; creep; stress- induced effects; microchemical changes)	Allen
	11:40 – 12:00	Break	
12:00 (Noon)	12:00 – 13:00	Microstrucural Evolution and Property Changes in Model Alloys and Steels (Fe-Cu model alloys; RPV steels; ferritic steels (ductile-to-brittle phase transition); nano-dimensional defects)	Hasegawa
13:00 (1 PM)	13:00 – 16:00	LUNCH	
14:00 (2 PM)			
15:00 (3 PM)			
16:00 (4 PM)	16:00 – 19:00	Lab IV	Selected Instructors
17:00 (5 PM)			
18:00 (6 PM)			
19:00 (7 PM)	19:00 – 20:00	Irradiation Assisted Stress Corrosion Cracking (non reactor pressure vessel (RPV) materials; microstructural changes and segregation effects)	Was
20:00 (8 PM)	>20:00	DINNER	

LECTURE DAY 10, Wednesday, July 28, 2004

09:00 (9 AM) 10:00 (10 AM) 11:00 (11 AM)	09:00 – 10:10	Astrophysical Relevance of Ion Bombardment (effects include sputtering, structural and morphological alterations, and chemical synthesis of molecular species)	Strazzulla
	10:10 – 10:40	Coffee Break	
	10:40 – 11:40	Radiation Effects in Nuclear Fuels II (advanced fuels including carbides, nitrides and inert matrix fuels for transmutation of actinides)	Matzke
	11:40 – 12:00	Break	
12:00 (Noon)	12:00 – 13:00	Photo-Stimulated Storage Phosphors: Physics and Applications for Radiation Imaging	Popov
13:00 (1 PM) 14:00 (2 PM)	13:00 – 15:00	LUNCH	
15:00 (3 PM)	15:00 – 16:00	Exposure of Bones to Ionizing Radiation	Kubisz
16:00 (4 PM) 17:00 (5 PM)	16:00 – 17:10	Future Trends, Summary and Closing Remarks	Sickafus, Selected Panel, and Questions from Students
18:00 (6 PM) 19:00 (7 PM)	17:10 – 19:30	Prepare for Banquet	
20:00 (8 PM)	>19:30	DINNER & BANQUET	