

2010 4-DAY SCIENCE TEACHER WORKSHOP
 "SCIENCE OF NUCLEAR ENERGY & RADIATION"

Preliminary schedule, subject to change

Revised 5/3/2010 8:00

Tuesday, July 20, 2010

3:30 PM	Registration and check-in	Various staff	Gladding Residence Center community room
	Welcome, course introduction and logistics Teacher introductions	Joe Montague Kevin McCoy Mark Pierson	Engineering Building auditorium
5:30 PM	Discussion of preworkshop homework and expectations	Russell Jamison	
6:15 PM	Dinner		Engineering Building
7:15 PM	Nuclear Energy in Virginia's Future	Gene Grecheck	
8:15 PM	Adjourn		

	= lecture sessions
	= special activities

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Wednesday, July 21, 2010

7:00 AM	Breakfast		Shafer Court Dining Center
8:00 AM	Introduction & Logistics	Joe Montague Kevin McCoy Mark Pierson Hasan Charkas	Engineering Building auditorium
8:15 AM	Radiation and Nuclear Energy Basics	Keith Welch	
9:15 AM	Discussion		
9:30 AM	Biological Effects of Radiation	Carl Tarantino	
10:30 AM	Discussion		
10:45 AM	Break		Engineering Building atrium
11:00 AM	Radiation Detection	Gary Tepper	Engineering Building auditorium
12:00 PM	Discussion		
12:15 PM	Lunch		Shafer Court Dining Center
1:30 PM	Beneficial Uses of Nuclear Science and Technology	Dana Knee	Engineering Building auditorium
2:30 PM	Discussion		
2:45 PM	Large Diffusion Cloud Chamber at SMV	David Hagan	
3:05 PM	Break		Engineering Building atrium
3:15 PM	Radiation Counting Lab	Reed Johnson Gary Tepper Mark Pierson Ben Waterland	Engineering Building laboratory
5:00 PM	Discussion of Lab Results		Engineering Building auditorium
5:30 PM	Free time		
6:00 PM	Dinner		
7:00 PM	Nuclear Energy and Public Opinion	Ann Bisconti	Engineering Building
8:00 PM	Adjourn		

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Thursday, July 22, 2010

7:00 AM	Breakfast		Shafer Court Dining Center
8:00 AM	Introduction & Logistics	Joe Montague Kevin McCoy Mark Pierson	Engineering Building auditorium
8:15 AM	Reactor Theory 101	Reed Johnson	
9:15 AM	Discussion		
9:30 AM	Nuclear Power Fundamentals	Rich Kochendarfer	
10:30 AM	Discussion		
10:45 AM	Break		Engineering Building atrium
11:00 AM	Reactor Safety	Mark Pierson	Engineering Building auditorium
12:00 PM	Discussion		
12:15 PM	Lunch		Shafer Court Dining Center
1:30 PM	Energy Source Comparison: Pros and Cons	Ben Grambau	Engineering Building auditorium
3:00 PM	Discussion		
3:15 PM	Break		Engineering Building atrium
3:30 PM	Trip to MCV Medical facility, by bus		
4:00 PM	Nuclear Medicine, Lecture and tour of the MCV facilities: Cyclotron, PET Scanner and Radiochemistry Lab	Dr. Mark Crosthwaite Carmen Bishop	MCV Hospital
6:00 PM	Return to Shafer Dining Center		Chartered Bus
6:15 PM	Dinner		Shafer Court Dining Center
7:00 PM	Adjourn		

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Friday, July 23, 2010

7:00 AM	Breakfast		Shafer Court Dining Center
8:00 AM	Careers in Nuclear Science, Engineering and Technology	Todd Flowers	Engineering Building auditorium
9:00 AM	Discussion		
9:15 AM	The nuclear fuel cycle (Part 1): front end: Mining, enrichment, and fuel fabrication	Ray Ganthner	
10:15 AM	Discussion		
10:30 AM	Break		Engineering Building atrium
10:45 AM	The nuclear fuel cycle (Part 2): back end Used fuel storage, transport, disposal, reprocessing	Kevin McCoy	Engineering Building auditorium
11:45 AM	Discussion		
12:00 PM	Lunch		Shafer Court Dining Center
1:15 PM	Use of Nuclear Science and Technology and Radiation in the Classroom	Christy Thomas	Engineering Building auditorium
3:00 PM	Break		Engineering Building atrium
3:15 PM	mPower modular reactor	Doug Lee	Engineering Building auditorium
4:05 PM	Discussion		
4:15 PM	Medical Isotope Production Reactor	Jack Dillich	
5:05 PM	Discussion		
5:15 PM	Free time		
6:00 PM	Dinner		
7:00 PM	Uranium Mining in Virginia	Norm Reynolds	Engineering Building
8:00 PM	Adjourn		

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Saturday, July 24, 2010

7:00 AM	Breakfast		Gladding Residence Center community room
8:00 AM	Check out	Various staff	
8:30 AM	Leave for North Anna Power Station, private automobiles	Staff Drivers if necessary	
10:00 AM	Arrive at North Anna Nuclear Information Center (NANIC)		
10:30 AM	Introduction to North Anna	Mike Duffey	NANIC
11:00 AM	GROUP 1: See-Thru Reactor and NANIC Tour [1/2 Class]	Wilson Madison	NANIC
11:00 AM	GROUP 2: Visit to the NAPS Simulator [1/2 Class]	Joe Scott Bill Jenkins	NAPS Training Building
12:30 PM	Lunch	NANIC	
1:30 PM	GROUP 2: See-Thru Reactor and NANIC Tour [1/2 Class]	Wilson Madison	NANIC
1:30 PM	GROUP 1: Visit to the NAPS Simulator [1/2 Class]	Joe Scott Bill Jenkins	NAPS Training Building
3:00 PM	Course summary, evaluations	All	NANIC
4:00 PM	End of course		

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PRE-WORKSHOP HOMEWORK ASSIGNMENT (2 Contact Hours)

1. Go to the World Nuclear Association (WNA) web site and read the papers that are available through the following links:

http://www.world-nuclear.org/education/uran.htm	What is uranium? How does it work?
http://www.world-nuclear.org/education/ueg.htm	Sustainable Energy - Uranium, electricity and climate change
http://www.world-nuclear.org/education/peac.htm	Peaceful atom

After reading the papers, write a one-paragraph summary for each paper, expressing your opinion of its value for you.*

(Links to additional papers are available in the section "Education Papers designed for use in schools" at the bottom of the page <http://www.world-nuclear.org/info/default.aspx>. These provide up-to-date discussions of many nuclear-related subjects, though they are generally not written from a U.S. perspective.)

2. Find a recent news article (no blogs, please) on nuclear power or radiation, prepare a short summary and submit.*
3. Provide 3 questions that you expect to get answered during the workshop and submit them.*

* Pre-workshop homework shall be submitted by e-mail to kevin.mccoy@areva.com by June 30, 2010.

POST-WORKSHOP ASSIGNMENT (5 Contact Hours)

1. Provide the answers to the three questions you provided as a part of the pre-workshop assignment.**
2. Complete the final test on-line (multiple choice test).**
3. Prepare and submit a lesson plan for one of your classes using the material provided during the workshop.**

** All post-workshop homework shall be completed by August 15, 2010. Items 1 and 3 shall be submitted by e-mail to kevin.mccoy@areva.com.

EVALUATION

Successful completion of the workshop will be evaluated based on:

1. Completion of all three parts of the pre-workshop assignment.
2. Class participation
3. Completion of all three parts of the post-workshop assignment.