

Preliminary
2008 4-DAY SCIENCE TEACHER WORKSHOP
“SCIENCE OF NUCLEAR ENERGY & RADIATION”
 Rev. – 06/11/08

<u>TUESDAY, JULY 8, 2008</u>			
4:00 PM	Registration and check-in	All	University Forest Apartments
6:00 PM	Welcome, course introduction and logistics Teacher introductions Discussion of Pre-workshop HW assignment and course expectations	Pascal Brocheny /Reed Johnson	University of Richmond Gottwald Center for the Sciences Gottwald Auditorium
7:00 PM	Walk from Science Building to Heilman Dining Center		
7:15 PM	Dinner Keynote Speaker	Dana Knee “Beneficial Uses of Nuclear Science and Technology”	Richmond Room, Lower Level Heilman Dining Center

Wednesday July 9, 2008			
7:00 AM	Breakfast	-	Heilman Dining Center
8:00 AM	Introduction & Logistics	Pascal Brocheny /Reed Johnson	Gottwald Center for the Sciences Gottwald Auditorium
8:15 AM	Radiation and nuclear energy basics	Keith Welch	Gottwald Auditorium
9:15 AM	Discussion		Gottwald Auditorium
9:30 AM	Break	-	Gottwald Center for the Sciences Atrium
9:45 AM	Biological Effects of Radiation	Carl Tarantino	Gottwald Auditorium
10:45 AM	Discussion		Gottwald Auditorium
11:00 AM	Radiation Detection	Bill Casino	Gottwald Auditorium
12:30 AM	Lunch	-	Heilman Dining Center
1:30 PM	Radiation Counting Lab,	Reed Johnson, Bill Casino, Carl Tarantino and Keith Welch	Gottwald Center for the Sciences Room D115 and D116
3:15 PM	Break		Gottwald Center for the Sciences 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. Crosthwaite Paul Riley	MCV Hospital
6:00 PM	Trip to Science Museum of Virginia (SMV)	Chartered Bus	
6:30 PM	Dinner and Tour, Science Museum of Virginia	David Hagan-	Science Museum of Virginia
8:30 PM	Return to University of Richmond	Chartered Bus	

Thursday, July 10, 2008

7:00 AM	Breakfast		Heilman Dining Center
8:00 AM	Introduction, Logistics and Questions	Pascal Brocheny /Reed Johnson	Gottwald Auditorium
8:15 AM	Reactor Theory, 101	Reed Johnson	Gottwald Auditorium
9:15 AM	Break		Gottwald Center for the Sciences Atrium
9:30 AM	Nuclear Power Fundamentals	Rich Kochendarfer	Gottwald Auditorium
10:30 AM	Discussion		Gottwald Auditorium
10:45 AM	Break	-	Gottwald Center for the Sciences Atrium
11:00 AM	Reactor Safety	Ross Anderson	Gottwald Auditorium
12:00	Discussion		Gottwald Auditorium
12:15 AM	Lunch	-	Heilman Dining Center
1:15 PM	The nuclear fuel cycle (Part 1): Mining, enrichment and fuel fabrication	Joe Montague	Gottwald Auditorium
2:15 PM	Discussion		Gottwald Auditorium
2:30 PM	Break		Gottwald Center for the Sciences Atrium
2:45 PM	The nuclear fuel cycle (Part 2): Used nuclear fuel management (Yucca Mountain, Utah, reprocessing, etc)	Kevin McCoy	Gottwald Auditorium
3:45 PM	Discussion	-	Gottwald Auditorium
4:00 PM	Break		Gottwald Center for the Sciences Atrium
4:15 PM	The Future of Nuclear: New nuclear plant construction, Nuclear Economics and the Hydrogen economy	Dana Knee	Gottwald Auditorium
5:15 PM	Discussion		Gottwald Auditorium
5:30 PM	Adjourn – Evening free to explore Richmond		

Friday, July 11, 2008

7:00 AM	Breakfast		Heilman Dining Center
8:00 AM	Introduction, Logistics and Questions	Pascal Brocheny /Reed Johnson	Gottwald Auditorium
8:15 AM	Careers in Nuclear Science, Engineering and Technology	Lisa Stiles	Gottwald Auditorium
9:15 AM	Discussion		Gottwald Auditorium
9:30 AM	Break		Gottwald Center for the Sciences Atrium
9:45 AM	Energy Source Comparison: Pros and Cons	Lisa Stiles and Mike Stuart	Gottwald Auditorium
11:15 AM	Discussion		Gottwald Auditorium
11:30 AM	Lunch		Heilman Dining Center
12:30 PM	Use of nuclear science and technology and radiation in the classroom	Christy Thomas	Gottwald Auditorium
2:00 PM	Break		Gottwald Center for the Sciences Atrium
2:15 PM	Breakout Sessions by Teacher Discipline : Lesson Plans	Various facilitators	Gottwald Auditorium
3:30 PM	Non-Proliferation and Homeland Security Issues	Felix Killar,	Gottwald Auditorium
4:30 PM	Discussion		Gottwald Auditorium
4:45	Demonstration, Virginia Div. Radiological Health Mobile Response Laboratory. Gamma Ray Counting and Energy Analysis	Les Foldesi, Va. Dept. Rad. Health	Parking Lot adjacent to Gottwald Auditorium
7:00 PM	Closing Dinner Keynote Speaker " Uranium Mining in Virginia	Norman Reynolds, Virginia Uranium, Inc.	Heilman Dining Center Richmond Room

SATURDAY, JULY 12, 2008			
7:00 AM	Breakfast		University Forest Apartments Apartment xxxx
8:00 AM	Check out		University Forest Apartments Apartment xxxx
8:30 AM	Leave for North Anna PowerStation, private automobiles	Staff Drivers if necessary	
10:00 AM	Arrive a North Anna Nuclear Information Center (SNIC)		
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, Bill Jenkins ,	NANIC
	GROUP 2: Visit to the NAPS Simulator [1/2 Class]	Joe Scott, Rick Stevens	NAPS Training Building
12:30 PM	Lunch		NANIC
1:30 PM	GROUP 2 See-Thru Reactor and NANIC Tour [1/2 Class	Wilson Madison, Bill Jenkins	NANIC
1:30 PM	GROUP 1: Visit to the NAPS Simulator [1/2 Class	Joe Scott, Rick Stevens	NAPS Training Building
3:00 PM	Course closure, evaluations	All	NANIC
4:00 PM	End of course		

PRE-WORKSHOP HOMEWORK ASSIGNMENT (2 Contact Hours)

- Go to the World Nuclear Association (WNA) web site, <http://www.world-nuclear.org/>, click on Information Papers, then scroll down to the bottom of the list to Education Papers Designed for Use in Schools. Read the following papers in that list, and write a one-paragraph summary for each paper, expressing your opinion of its value for you.*

3. What is Uranium: Why Does it Work

7. Sustainable Energy: Uranium, Electricity and Climate Change

#12. Peaceful Atom

(You may read any of the other articles in the WNA list. You will find there up-to-date discussions of almost every nuclear-related subject or issue, but all are written with a Euro-centric approach.)

- Find a recent news piece on nuclear power or radiation, prepare a short summary and submit*.
- Provide 3 questions that you expect to get answered during the workshop and submit them*.

POST-WORKSHOP ASSIGNMENTS (5 Contact Hours)

1. Provide the answers to your own three questions (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*.

EVALUATION

The successful completion of the workshop will be evaluated based on:

- Summaries and three questions provided in the pre-workshop assignment
- Class participation
- Answers to their own questions at the end of the workshop
- Test online (multiple choice test)
- Lesson plan

*All submissions shall be by e-mail to wjohnson@kaballero.com and kevin.mccoy@areva.com by June 30, 2008.