



2008-09 Application to join the WestConn Institute for Science Teacher Research II (WISTR II)

Pending funding from the Connecticut Department of Higher Education, Western Connecticut State University, in partnership with regional public and private schools will once again offer a science institute that supports the professional development of science teachers by implementing working partnerships between practicing scientists, teachers, and educational coaches.

What is WISTR II?

This year, 20 teachers will be selected and designated WestConn Institute for Science Teacher Research (WISTR) Fellows. Fellows will participate in a 8-day summer institute where they will work with a scientist on a laboratory project they can apply in the classroom, and with an educational coach to improve questioning skills and differentiated instruction strategies that can complement the laboratory project and be used to assess student learning. Action Research plans developed in the summer and fall will be implemented during the fall or spring semester, and follow-up activities with science mentors and educational coaches (3 times per semester) will focus on analyzing the effectiveness of research plans in the classroom. All research projects will be showcased at an Exhibition Event hosted at the University at the end of May, 2009.

This year WISTR II will emphasize laboratory activities that can improve content knowledge in **Environmental Science and Human Health**. Examples of activities include (but are not limited to) those used by middle and high school teachers to support Connecticut Science Content Standards:

1. Elements, Compounds and Mixtures (6.1)
2. Ecosystems (6.2)
3. Water Quality (6.4)
4. Energy and Work (7.1)
5. Food Technology (7.4)
6. Reproduction and Heredity (8.2)
7. Carbon Compounds (9.5)
8. Polymers (9.6)
7. Cycles of Matter in Earth's Systems (9.7)
8. Living with Microorganisms (10.2)
9. Biotechnology (10.3)
10. Genetics (10.4)

WISTR II Program Details:

Specific program description:

1. *Summer Institute, July 7 – 10 and 14 – 17, 10 a.m. to 6 p.m.*

Mornings will be dedicated to laboratory science training, and the afternoons to educational workshops that emphasize developing questioning skills, differentiated instruction, and assessing student learning. By the end of the Summer Institute, teachers will have developed a laboratory science based research project that can be implemented in their classroom.

2. *Follow-up Activities*

Teachers will be required to meet with their content mentors and educational coaches between 6 to 9 p.m. on the following days (September 26, October 24, December 5, February 6, March 13, and April 10). During these meetings, teachers will be expected to consult with their mentors about their projects and report on the research data they collected in their classroom.

3. *Exhibition Event, May 22, 4 to 8 p.m.*

Teachers will showcase their class projects to the public in cooperation with their WestConn faculty mentors. Teachers will be eligible to receive \$1512 toward graduate tuition (4 credits plus registration) at WestConn, or as a research stipend upon the successful completion of the Summer Institute. Teachers will be eligible to receive a \$100 stipend for each follow-up activity they attend, and this money will be paid after the Exhibition Event.

Specific project deliverables: During the Summer Institute, WISTR II Fellows will develop an inquiry-based laboratory exercise and associated plan that includes goals, framework, and timeline for implementing the activity. Fellows will be expected to implement the plan during the fall or spring semester and analyze student learning based on the assessment tools they developed for the activity over the summer. WISTR Fellows will be expected to develop a poster summarizing their research projects, that will be showcased at the Exhibition Event. These projects will be compiled into a Handbook of Classroom Activities that support scientific concepts in Environmental Science and Human Health that will be disseminated to all participating teachers and ultimately submitted for book review to the NSTA.

Interested teachers should complete this application by January 15, and completed applications should be submitted to district science supervisors, or to Dr. Theodora Pinou, WISTR II Program Director, Department of Biology, Western Connecticut State University, 181 White Street, Danbury, CT 06810.

Applicants will be notified of their acceptance by mail in late February.

Application to Become a WISTR II Fellow

Name: _____

Address: _____

Home Phone: _____ Work Phone: _____

Preferred E-mail: _____

School and district currently employed in: _____

Subjects you teach: _____

Number of years you have taught science: _____

Do you know how to collect information from your students using Survey Monkey or Zoomerang? _____ Yes _____ No

If yes, circle the name of the program you use: Survey Monkey Zoomerang Other _____

Part 1: Science Content and Process Knowledge

Please describe the activity for which you are seeking resource assistance. Circle the standard(s) you will be using in this activity or add an additional standard.

Connecticut Science Content Standards:

- a. Elements, Compounds and Mixtures (6.1)
- b. Ecosystems (6.2)
- c. Water Quality (6.4)
- d. Energy and Work (7.1)
- e. Food Technology (7.4)
- f. Reproduction and Heredity (8.2)
- g. Carbon Compounds (9.5)
- h. Polymers (9.6)
- i. Cycles of Matter in Earth's Systems (9.7)
- j. Living with Microorganisms (10.2)
- k. Biotechnology (10.3)
- l. Genetics (10.4)
- m. Other _____

On a separate attachment, please explain the focus of the assistance you are seeking, such as expansion of background content knowledge, related computer technology support, laboratory science skills, math integration, influences of science and technology in our society, etc. Also provide a copy of your present activity handout with your application and any associated supporting material and assessment tools.

When do you expect to teach this activity next year? Provide an approximate month: _____

Part 2: Action Research

Action Research refers to an investigation that a teacher designs to find out more about what is happening in his or her school or classroom in order to make an informed decision about what should be improved and how to make improvements. This project is created for you to gather information about the effectiveness of your science investigation. By the end of your Action Research project, you will provide 2 types of information:

(a) changes in your use and your student's use of Higher Order Thinking Skills (HOTS) and (b) effects on student learning.

- a. A HOTS activity has already been developed and will be described during the July session.
- b. On a separate sheet of paper, **describe how you plan to assess student learning as a result of the laboratory activity you will be developing or revising in Part 1.**

