

**GS-5 Certified:  
Increasing Soil Science Educational  
Opportunities Online  
for Undergraduate Students and  
USDA Employees**

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Riverside, CA**

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USDA CSREES HSI  
National Program Director**

# Challenge

**In FY 2008 USDA Identified  
20 Mission Critical Occupations**

- 7. Soil Conservation Specialist (457)**
- 8. Soil Conservation Technician (458)**
- 11. Soil Science Specialist (470)**

# Challenge

**As of 10/21/07 (51,211 employees)**

**0457-Soil Conservation Specialist**

**4% Hispanic**

**0458-Soil Conservation Technician**

**2.8% Hispanic**

**0470-Soil Science Specialist**

**3.5% Hispanic**

# Challenge

**While there is a need for soil scientists,  
soil science programs and courses  
disappearing**

**Replaced with Environmental Science  
Programs with less soil science course  
hours**

# Challenge

**Example:**

**University of California Riverside**

**No longer degree offered in Soil  
Science, but rather Environmental  
Science**



# Challenge

**Student graduating with BS in Environmental Science from UCR requires an additional 6-12 hours of soils courses for GS5 470 Series!**

**Often courses that are offered every other year.....**

# Soil Online

<http://academic.rcc.edu/soil/>

**Three year project USDA CSREES HSI funded**

USDA CSREES Proposal Number: 2008-02162

**Five online Soil Science Courses**

**Riverside City College (2 courses)**

**UC-Riverside (3 courses)**



# Soil Online

**<http://academic.rcc.edu/soil/>**

**Cost?**

**Riverside City College - \$20 per credit unit**

**UC-Riverside – around \$450 per course**

**(depends on number enrolled)**



# **Courses**

## **Fall 2009 – Offered through RCC**

**Bio 14 – Introduction to Soil Science - Lecture**

**Bio 15 - Introduction to Soil Science - Laboratory**

## **Fall 2010 – Offered through UCR**

**Introduction to Soil Science**

**Upper Division Lecture**

## **Fall 2011– Offered through UCR**

**Soil Physics**

**Upper Division Lecture**



# Soil Online

## Faculty

**Dr. Ron Reuter – Oregon State University**

**Dr. Jamie Whiteford – Ventura College**

**Dr. Sharon Walker – UC-Riverside**



# Soil Online

## Dr. Ron Reuter

**RCC Lower Division Course**

**Bio 15 – Introduction to Soil Science  
Laboratory (3 semester hours)**

**A laboratory course focuses on the basis of soil science, physical and biogeochemical properties, and interpretation for use and management. Perspectives range from agricultural, wildlands, watershed, and environmental impact.**



# Soil Online

## Dr. Ron Reuter

Proven success at OSU online degree programs in Natural Resources, General Agriculture, and Environmental Science

Reuter, R.J. 2007. Introductory soils online - an effective way to get online students in the field. *J. Nat. Resour. Life Sci. Educ.* 36:139-146.



# Soil Online

## Dr. Jamie Whiteford

RCC Lower Division Course

**Bio 14 – Introduction to Soil Science  
Lecture (3 semester hours)**

An introduction to physical properties and classification of soils, physical and chemical properties of soil that governs soil reactions and interactions, nutrient regeneration, and management principles in relation to air, water, nutrients and organic matter.



# Soil Online

**Dr. Sharon Walker**

UC- Riverside

**Fall 2011 Soil Physics**

Topics include physical properties of soils and methods of evaluation.

Emphasis is on movement of water, heat, gasses, and chemicals through soil. This course will be offered through UCR.



# Online Courses

**All online students required to shadow USDA NRCS, FS, or ARS employee for one day.**



# For Students

**13 outstanding students who complete an online course will be offered a 1-week paid internship (\$1000 stipend) with a USDA agency to provide them an experiential learning opportunity and formal mentoring.**

# Soil Online

**<http://academic.rcc.edu/soil/>**

**Please visit the website and register  
for updates and announcements and  
registration details**

**If you would like to offer time for  
students or would like interns**

**heather.smith@rcc.edu**

# Co-PI

**Dr. Victor Zordan**

**Assistant Professor**

**Computer Science**

**UC-Riverside**

**[Riverside Graphics Lab](#)**



**<http://academic.rcc.edu/soil/>**

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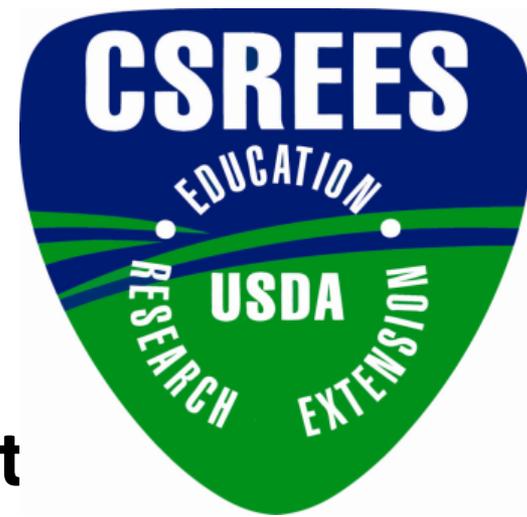
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# Thank You!

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**USDA CSREES HSI**  
**National Program Direct**



**Maxine Levin**  
**Soil Scientist**  
**USDA/NRCS/SSD**