

# APPROPRIATIONS REQUEST FORM OREGON HOUSE DELEGATION FISCAL YEAR 2010

**DEADLINE FOR SUBMISSION: FEBRUARY 13, 2009**

**PLEASE NOTE: As required by the House Appropriations Committee, all requests will be made public on the requesting Member's website.**

**1. Project Title:** Bioremediation of Munitions Residues

**2. Organization Name and address:** College of Veterinary Medicine, Oregon State University  
105 Magruder Hall  
Corvallis, OR 97331-5704

**3. Primary Contact name, phone number, mobile phone number, fax number and email:**

Dr. A. Morrie Craig, Professor of Toxicology  
College of Veterinary Medicine, Oregon State University  
105 Magruder Hall  
Corvallis, OR 97331-5704  
Phone: (541) 737-3036  
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Email: a.morrie.craig@oregonstate.edu

**4. Project Location Address (if different from Organization):** Same

**5. Please describe the requesting organization's main activities, and whether it is a public, private non-profit, or private for-profit entity:** Academic / Research

**6. Briefly describe the activity or project for which funding is requested (please keep to 500 words or less.)**

Oregon State University (OSU) researchers will investigate an agricultural solution to the multi-billion dollar problem of soil contamination by munitions residues including TNT, RDX, and HMX. OSU researchers are on a path to develop an economically and environmentally-friendly method of bioremediating these munitions residues using plants and animals.

There are approximately 30 to 40 million acres of U.S. military ranges and bases contaminated with munitions that the EPA has estimated will cost more than **\$30 billion** to clean-up. Agricultural-based bioremediation technologies are potentially a low-cost approach to munitions clean-up because they would eliminate the need to excavate, transport and then process large volumes of contaminated soil. If effective, clean-up costs could be reduced by 90%, saving the federal government billions of dollars.

This agricultural biotech-based solution couples specially bred grasses with ruminants (grazing animals such as sheep). Select grasses absorb the munitions into the foliage and those grasses are grazed by ruminants. The munitions residues are detoxified in the rumen of the animal's stomachs by anaerobic bacteria into nontoxic compounds with no harmful effects to the host.

Funds requested for this project would enable study of the absorption potential of three grass species – tall fescue, perennial ryegrass, and orchard grass. These tests will determine which plants are optimal for absorbing munitions into their foliage. Thereafter, research will examine which animal species and ruminal microbes are optimal for metabolizing munitions into nontoxic components.

**7. Has this project received federal appropriations funding in past fiscal years? Yes**

**7a. If yes, please provide fiscal year, Department, Account, and funding amount of any previous funding.**

USDA/ARS 907 (Craig Munitions Soil) – to College of Veterinary Medicine, under Cooperative Agreement No. 58-1265-6-076 (Index R0293A)

2005-06 - (\$120,000 - amount going to USDA) \$85,900 ;

2006-07 - (\$120,000 - amount going to USDA) \$80,190;

2007-08 - \$60,000;

2008-09 - \$27,000 (only partial funds for year)

(Current Total \$253,090 to OSU).

**8. Federal agency and account from which funds are requested (Please be specific – e.g. Department of Housing and Urban Development, Economic Development Initiatives account):**

USDA/ARS

**9. What is the purpose of the project? Why is it a valuable use of taxpayer funds? How will the project support efforts to improve the economy and create jobs in Oregon?**

Funds will be used to identify specific grasses for use in munitions phytoremediation; to test the technology in the field; and to identify the underlying microbial and genetic processes involved in the processes. The “green” agriculture-based biotechnology to be developed to commercial scale by Oregon State University has the potential to both solve the munitions cleanup problem at a fraction of the cost of traditional technologies (excavate and burn or treat above ground in slurry reactors) and to generate profitable new business lines for the Oregon grass seed and sheep industries.

There is the potential for this technology to create hundreds of new agricultural business sector jobs in Idaho and Oregon as well as nation-wide as the technology is widely implemented. In addition, this research and development effort will result in the training of numerous graduate students and postdoctoral scientist to add to the technically-trained workforces of Oregon and the nation.

**10. Have you requested funding for this project from other Members of Congress? If so, who?**

Oregon Representative – Kurt Schrader

**11. Funding Details:**

**a. Total project cost (all funding sources and all years):** ~\$3.2 million

**b. Amount being requested for this project in Fiscal Year 2010:**

FY2010 Budget \$500,000

**c. What other funding sources (local, regional, state) are contributing to this project or activity? (Please provide specific dollar amount or percentage.)**

Ruminant Solutions LLC (A "Green Solution" for Bioremediation by Ruminant Microbes), to OSU College of Veterinary Medicine (Index V0225A)

FY 2007 - \$150,000;

FY 2008 - \$58,480

Massachusetts Military Reservation (MMR)  
FY 2009 - \$75,000 (on-site plant trial)

Applying to the Environmental Security Technology Certification Program (ESTCP),  
a Department of Defense (DoD) program for FY 2010 for \$200,000

**d. Do you expect to request federal funding in future years for this project?** Yes

**e. Breakdown/budget of the amount you are requesting for this project in FY 2010.  
(e.g. salary \$40,000; computer \$3,000):**

FY2010 Budget \$500,000

Salaries - \$339,880

½ Current Post doc #1 – \$37,600

½ Current Post doc #2 – \$32,400

Current Research Associate #1 – \$84,800

Current Research Associate #2 – \$69,600

Student Worker – \$5,400

New Grad Student – \$35,000

New Tech – \$75,000

Non expendable Equipment – \$110,000

\$51,900 (environmental chamber)

\$44,200 (High Performance Liquid Chromatography instrument - HPLC)

\$13,900 (radiomatics)

Material and Supplies - \$41,800

Travel (domestic) - \$4,110

(foreign) - \$3,710

Publication Costs (posters) - \$500

**f. Please list public or private organizations that have supported/endorsed this project:**

Oregon Seed Council, Roger Beyer (Executive Director), 1193 Royvonne South, Suite 11,  
Salem, OR 97302-1932, TEL: 503-585-1157

Ruminant solutions, LLC, Pete Domenici, Domenici Law Firm, P.C., 320 Gold Ave. SW,  
Suite 1000, Albuquerque, NM 87102, TEL: (505) 883-6250

**g. Is this project scalable? (i.e. if partial funding is awarded, will the  
organization be able to use the funds in FY 2010?):**

FY2010 - Yes this project is scalable.

Please return this form no later than February 13, 2009 (via email) to:

[appropriations.blumenauer@mail.house.gov](mailto:appropriations.blumenauer@mail.house.gov)