

**NATIONAL PORK BOARD**  
**Request for Proposals**  
**Information for Spring 2007 Funding**

***DEADLINE: Tuesday, April 17<sup>th</sup>, 2007 – 5:00 p.m. CST***

The National Pork Board is soliciting research proposals dealing with:

- A – Environment**
- B – Swine Health- PRRS**
- C - Animal Welfare**

Please read carefully the individual solicitation descriptions for project proposals. If you have questions related directly to the description of a specific solicitation, contact the staff member listed in charge of the program area. For questions on the general submission process, contact Bev Everitt at 515/223-2750.

To be considered for committee review, **all proposals must be submitted via the website by 5:00 p.m. CST on Tuesday, April 17<sup>th</sup>, 2007** (see [www.pork.org](http://www.pork.org) for links). Proposals will be reviewed by both technical advisors and pork producers prior to the committee selection meetings.

**STAFF MEMBERS:**

**Animal Welfare**

Sherrie Niekamp      [sniekamp@pork.org](mailto:sniekamp@pork.org)      515/223-3533

**Environment**

Allan Stokes      [astokes@pork.org](mailto:astokes@pork.org)      515/223-3447

**Swine Health**

Pamela Zaabel      [pzaabel@pork.org](mailto:pzaabel@pork.org)      515/223-2791

**NOTES:**

Proposal selection will occur in late June 2007.  
Notification of grant awards will be done in late July 2007.  
Project funding will begin September 1, 2007.  
Requests for second-year funding must be resubmitted.

**A. Environment**

The Environment Committee is soliciting proposals in the following targeted areas only. Proposals must be submitted following the attached format to be considered. Projects are funded on a one-year basis. Consideration for funding subsequent years of multi-year efforts may be considered based on demonstrated accomplishments of previously funded research efforts toward success of the overall research project as described in interim or final research reports, and submittal of a new proposal covering the new funding requested. Funding for each project will generally be limited to not exceed **\$40,000** unless documentation of need and compelling justification for a greater amount is provided.

Proposals will be reviewed by panels for scientific soundness and for industry priority. Proposals may be returned to the investigator with suggested/requested revisions prior to making a final funding decision. Funding for accepted projects will follow final approval by the National Pork Board.

For information regarding this solicitation, please contact Allan Stokes by Email at [AStokes@pork.org](mailto:AStokes@pork.org) or by phone at (515) 223-3447.

Proposals are solicited in the following areas:

**A1. Environmental effects of manure application to non-corn crops.**

Identify and quantify environmental impacts to air quality, land quality and surface and ground water quality from land application of swine manure to lands used for growing crops other than corn. Specific areas to be addressed will be land application to soybeans, forage grasses, and other grasses used in the production of bio-fuels. These efforts quantify the effects of varying rates of swine manure application on plant nutrient uptake, plant growth, mobility of applied nutrients to air as well as surface water and ground water sources, residual soil nutrient content, and crop yield rates.

**A2. Energy offset savings from using manure as a nutrient source for crop production.**

Quantify the overall energy use differential, crop yield and economic costs/benefit impacts currently realized as well as potential for future realization from using swine manure as a replacement for commercially manufactured nutrients (nitrogen, phosphorous, potassium). This should include volumes of manure used and the volumes of commercially manufactured nutrients replaced/offset, relative impacts on crop yield, relative impacts on the environment (air, land & water) and overall costs / savings from replacement of commercially manufactured nutrients with swine manure. This should also quantify the potential net energy use impacts from use of swine manure to replace/offset the use of commercially manufactured nutrients. The developed data is to be expressed on a single farm basis as well as projected national aggregate basis.

**A3. Methods for stabilizing and capturing or reclaiming nitrogen.**

Develop practical and cost effective on-farm management practices and/or technologies to capture or reclaim nitrogen (ammonia) from excreted manure at swine facilities for further processing or use. This work must also address the potential economic impact on producers of the practices and technologies investigated.

**A4. Whole Farm Nutrient Balance**

Develop and validate a model for evaluation of mass nutrient balance in a swine production operation including accounting for inputs, processes, and outputs on both a swine barn only and a whole farm system basis for different phases of production in different regions of the country.

**B. Swine Health**

Since its discovery in 1991, Porcine Reproductive and Respiratory Syndrome virus (PRRSV) has proven itself as a significant pathogen of swine in nearly all production areas of the world. While a great deal has been learned about the virus and the disease it causes in the decade since its discovery, producers and veterinarians still find themselves challenged in finding predictably successful tools for managing or eliminating the virus from farms.

Beginning in 2006, members of the National Pork Board's Swine Health Committee have been discussing the research results received through the PRRS Initiative funding. Based on the research results and field experiences with PRRSV over the past 3 years of the PRRS Initiative funding, the research objectives of the PRRS Initiative will focus on new areas for 2007.

Three Research Objectives have been identified for 2007 funding: PRRSV Immunology, PRRSV Epidemiology and Ecology, and PRRSV Diagnostics. The research topics under each objective to be included in funding for 2007 are as follows:

**B1. PRRSV Immunology**

- a. -Identification of common protective epitope(s) ultimately leading to a more efficacious vaccine providing cross-protection
- b. -Differential vaccine development
- c. -Develop management recommendations based on immune response
  - o Endemic Herd Infection
  - o Acute Herd Infection
  - o Replacement Stock

**B2. PRRSV Epidemiology and Ecology**

- a. -Investigate key routes of transmission
  - o Methods to eliminate infective PRRSV in semen
    - o Semen "sanitation" or "washing"
    - o Diagnostic techniques to detect infected semen on site
  - o Transmission of PRRSV in aerosols
    - o Investigate what the lowest infectious dose is and the ability to detect the lowest infectious dose

- Investigate the use of ultraviolet light on incoming air or on exhaust systems to prevent or eliminate the spread of PRRSV as it relates to aerosol transmission
- Potential spread of PRRSV during transport of pigs
  - Examine the risk of PRRSV positive pigs in transit transmitting virus to herds located near the route.
  - Study the use/necessity of filtered trucks in transporting PRRSV naive pigs.
- b.** -Understanding transmission
  - PRRSV transmission within a farm
  - Identification of risk factors for between farm transmission
- c.** -Alternate hosts/reservoirs of virus
  - Potential reservoirs not yet investigated
- d.** -Biosecurity
  - Examine the potential for employees to contaminate equipment/supplies on the farm during an outbreak that could re-infect the farm by harboring the virus
  - Examine the potential for employees/equipment/supplies to provide an “escape” route for the virus to leave the farm during an outbreak
  - Investigate if PRRSV can be harbored on the farm
- e.** -Surveillance
  - Sequencing strains to aid in determining epidemiology in a region
  - Integration of diagnostic lab databases to better understand PRRS epidemiology in real time

**B3. PRRSV Diagnostics**

- a.** -Development of tests to detect PRRSV in commercial herds and boar studs earlier and with increased sensitivity, specificity, and decreased cost to producers.
  - Diagnostics for earlier detection at herd level
  - Improvement of available diagnostic reagents
  - Development of practitioner/producer based diagnostics
- b.** -Differentiation of exposed, vaccinated, and infected swine

Funds will be awarded for one year. Projects seeking second-year funding of a previously funded project requires submission of a fully-developed proposal that includes a demonstration of satisfactory progress on work proposed in the first year. Newly submitted multi-year proposals should provide a clear overall vision and objectives for the entire project with a detailed plan of work and budget for the first year. Further information regarding this solicitation can be directed to Pamela Zaabel by email at [pzaabel@pork.org](mailto:pzaabel@pork.org) or by phone at 515/223-2791.

## **C. Animal Welfare**

The Animal Welfare Committee is soliciting proposals on issues affecting the welfare of swine. Research topics are listed below in priority order. Researchers are encouraged to find matching funds and projects that are multidisciplinary in their approach are encouraged. Principal investigators are strongly encouraged to describe methodology in detail. Behavioral methods and physiological assays used in the studies need to be validated. Funding is available for one year projects but extended timelines will be considered as some types of research cannot be completed in a 12 month period. Further inquiries can be directed to Sherrie Niekamp by email [sniekamp@pork.org](mailto:sniekamp@pork.org) or by phone: 515/223-3533.

### **C1. Sow Gestation Housing**

- C1.1** Optimize management or other practices (non-pharmacological) to minimize aggression and variability in body condition in group housed sows.

### **C2. Handling / Transport**

- C2.1** Identify or develop systems or methods of loading and unloading that would eliminate rough handling (including electric prods) and non-ambulatory pigs. Novel approaches are encouraged.
- C2.2** Develop new or refine current transport trailer designs that enhance the well-being of the pig being transported. Partnerships and co-funding are strongly encouraged.

### **C3. Production Practices**

**C3.1** Develop new or refine current production practices/facilities that promote continual improvement of the well-being of the pig.