

# **Agricultural Research Programs**



*Presents the 2004 Agricultural Research Award to*

**Dr. Michael Spurlock**

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**2:15 p.m. Friday, May 7**

Whistler Hall, Room 116

**2004**

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# **Agricultural Research Award**

*Presentation & Seminar*

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**In honor of**

**Dr. Michael Spurlock**

**2:15 p.m. Friday, May 7**

Whistler Hall, Room 116

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## ***Schedule***

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|------|--|
| 2:15 | <i>Welcome &amp; Award Presentation</i>                                      |
| 2:30 | <i>Seminar: “Fat Cells, Pigs and People:<br/>A New Look at an Old Enemy”</i> |
| 3:20 | <i>Reception</i>   |

# Purdue University **Agricultural Research Award**

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**E**stablished in 1982, the Agricultural Research Award recognizes research excellence by a faculty member in the Purdue University School of Agriculture with less than 15 years experience beyond the Ph.D.

The award consists of a plaque, a \$1,500 honorarium funded by earnings in the Charles Guthrie Patterson Memorial Endowment and Matthew Morgan Hamilton Funds, and \$10,000 for the recipient's research program.

Purdue Agricultural Research Programs bestows this award annually to recognize a scientist who has demonstrated a high level of excellence in the application of scientific principles to the solution of important research problems and who has, through his or her research, made significant contributions to agriculture, natural resources, and quality of life of Indiana citizens.





## Michael E. Spurlock

Associate Professor of Animal Sciences

### *2004 Agricultural Research Award Recipient*

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Mike Spurlock describes himself as “ordinary.” But no ordinary person wins the Purdue Agricultural Research Award. That takes a scientist whose work improves Indiana agriculture and also, in Randy Woodson’s words, “pushes the envelope of science.”

In his work on adipocytes (fat cells) in pigs, Spurlock has done both. He has been instrumental in establishing a new paradigm for fat cells. The old paradigm? That fat cells just store energy and fat. The new paradigm? That fat cells help control lipid, or fatty acid, accumulation and play an important role in the immune system.

Spurlock and colleagues have found that pig fat cells produce hormones, leptin and adiponectin, that regulate energy metabolism and immunological pathways. They have also found that fat cells behave in many ways as immune cells. These findings promise to establish a strong linkage among energy metabolism, adiposity (obesity), and the immune function.

A self-described “aggie at heart,” Spurlock maintains that “for me, it has to come back to an agricultural application.” “It” does. His work is advancing understanding of why pigs in commercial settings do not attain their genetic potential for growth performance and why some genetic lines selected for high lean growth rates are more susceptible to diseases. It will facilitate development of management strategies that will improve the production efficiency, health, and well-being of livestock.

But, while his work certainly has agricultural applications, it also extends to human health applications, to combating obesity and related health problems like diabetes. Thus his role in the Program of Comparative Medicine, a collaborative effort of Purdue’s Department of Animal Sciences and School of Veterinary Medicine and the Indiana University School of Medicine.

According to Woodson, Purdue’s role in the collaboration is to develop animal models for human diseases. Pigs are ideal for developing such models, having a similar circulatory system, heart rate, and organ size in relation to body mass to those of humans. And, like humans, pigs no longer

forage for food. Both eat as much as or more than their ancestors did, but they don't expend as much energy.

Spurlock wants to know why we over consume and what biochemical defects prevent normal cellular processes from disposing of excess energy rather than storing it. He is researching just how leptin and adiponectin affect energy metabolism as it relates to obesity and diabetes. That will help identify effective preventative and therapeutic strategies for humans.

But how did Spurlock get here from there? How did he get to his position in Purdue's School of Agriculture from the small town of Mountain Home, in northern Arkansas?

His parents, who grew up when education was a luxury, were "incredible driving forces," he says. So was Boyd O'Dell, a biochemist with a passion for science from the University of Missouri, where Spurlock earned his B.S. (1981) and—eventually—his M.S. (1987) and Ph.D. (1989). O'Dell, he explains, "made science so much fun." And then there was (and is) Scott Mills, with whom Spurlock first worked as a postdoc at Purdue (1991-1993). According to Spurlock, "Scott Mills treated me so well that it was easy to be successful."

Between his B.S. and his grad degrees, Spurlock worked in industry at a genetic evaluation station, feeding and weighing pigs. There, he worked with scientists, envied scientists, and decided he wanted to be a scientist. He observes that "science is like a bug—it's contagious."

Spurlock's year and a half stint as a Primary Reviewer with the U.S. Food and Drug Administration, Center for Veterinary Medicine, before he first came to Purdue, deepened his addiction to science. In 1993, he joined Purina Mills, Inc., where he was given the opportunity to start his own swine growth and development program. He never left academia behind, though. A Purdue Adjunct Assistant Professor from 1995 to 1999, he continued to collaborate with colleagues from academia and wrote some of his 37 plus refereed journal articles while still with Purina Mills.

But that wasn't enough. He missed the academic environment, which he describes as "infectious," and became a permanent member of the Department of Animal Sciences faculty in 1999.

And now, for work that has enormous implications for both animal and human health, Purdue Agricultural Research Programs is proud to bestow the 2004 Purdue Agricultural Research Award on Dr. Michael E. Spurlock.



# **Agricultural Research Award**

## *Recipients*

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- 1982 Robert L. Thompson**  
Department of Agricultural Economics
- 1983 John H. Cushman**  
Department of Agronomy
- 1984 Wallace E. Tyner**  
Department of Agricultural Economics
- 1985 Michael R. Ladisch**  
Department of Agricultural Engineering
- 1988 Peter E. Dunn**  
Department of Entomology
- 1989 Phillip C. Abbott**  
Department of Agricultural Economics
- 1990 Martin R. Okos**  
Department of Agricultural Engineering
- 1991 Nicholas C. Carpita**  
Department of Botany and Plant Pathology
- 1992 Mark A. Diekman**  
Department of Animal Sciences
- 1993 Jeffrey J. Volenec**  
Department of Agronomy

**1994 W. Randy Woodson**

Department of Horticulture

**1995 Thomas W. Hertel**

Department of Agricultural Economics

**1996 Allan P. Schinckel**

Department of Animal Sciences

**1997 S. Suzanne Nielsen**

Department of Food Science

**1998 Bernard A. Engel**

Department of Agricultural and  
Biological Engineering

**1999 Sally A. Mackenzie**

Department of Agronomy

**2000 Bruce Hamaker**

Department of Food Science

**2001 Clint Chapple**

Department of Biochemistry

**2002 K.G. Raghothama**

Department of Horticulture and  
Landscape Architecture

**2003 Arun K. Bhunia**

Department of Food Science



**Purdue Agricultural Research Programs - 2004**