

AQUACULTURE

KSU Program of Distinction

A Land Grant Program

College of Mathematics, Science, Health & Technology

Kentucky State University

AQUACULTURE

KSU Program of Distinction



**KENTUCKY
STATE
UNIVERSITY**

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ANNUAL REPORT 2007-08

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Tod Porter and Charles Weibel**

Edited by Dr. James Tidwell

KSU AQUACULTURE RESEARCH CENTER

EXECUTIVE SUMMARY



Marian McGuire (L) from the KSU/Xerox Copy Center teamed with Lori Davis, Xerox Field Manager, Dr. Benson, and the Aquaculture crew to build teaching platforms at the EEC. Xerox also contributed \$3,000 for Center improvements.

Environmental Education Center Smashing Success with Visitors

During the year, there have been over 1,000 visitors to the EEC (20 groups).

For those who can't come to the KSU-EEC, the mobile EEC unit can go to them. The Mobile EEC has made over 7,500 contacts through 50 classes in 14 counties across Kentucky.

"The hands-on experience you provided to my kids was instrumental to their learning." Ann Morgan, Science Teacher, Franklin Co. H.S.

The EEC has received over \$75,000 in funding from various agencies to construct over 1500 feet of handicapped-accessible trails, five new educational kiosks, a bird blind, and two handicapped-accessible porta-johns.

The Kentucky Ready Mix Association donated pervious concrete to construct over 400 feet of ADA-compliant trails, and the Xerox Community Involvement Project donated the materials and labor to construct two ADA-compliant teaching platforms.

Pleased Participants Praise Bass Workshop

A workshop is much like the preparation for a party: a lot of work goes into it with no guarantee of who may come or how it will be received by those attending.

With the increased interest in largemouth bass, KSU decided to put together a workshop sharing its research in the areas of hatchery/nursery, feed training, growing fingerlings, over-wintering, second-year growout, feed and feeding, harvestings, marketing and economics. Shortly after the conclusion of the workshop, this letter was received:

"I just wanted to send a little note to express how impressed we were when we attended the seminar on Oct. 19, 2007. I will admit that we had many reservations on driving 300 miles to attend a 3 hour seminar but our expectations were surpassed.

"We were very impressed with the speakers and their knowledge on the subject of bass fish farming. We came away from the day with a lot of useful information and many new contacts... Our friends whom are raising bass were overwhelmed by the amount of information that we received and were disappointed that they did not attend the seminar. No other seminar that we have attended has given us the vastness of information...

"You and your staff should be very proud of the great job that you have accomplished with this seminar..."

Lynn Urfer, Sam Wise & Dick Wise, New Philadelphia, Ohio

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EXECUTIVE SUMMARY



Online Courses Reach Students Around Globe

As KSU's Program of Distinction, the Division of Aquaculture's mission is to seek modes of innovation that serve students, farmers and citizens.

The development of online courses has proven to be appealing to all three groups. Since starting with *Fish Genetics* in fall 2002, adding *Principles of Aquaculture* in summer 2007, and *Basics of Fish Diseases* in summer 2008, Aquaculture has served students in 36 states and 15 foreign countries.

Students in 36 states & 15 countries

Principles of Aquaculture and *Basics of Fish Diseases* are video-based courses that allow students to see the teacher, PowerPoint presentations and video clips as many times as they wish. A third video-based course, *Fish Reproduction and Spawning*, is in the final editing stages. Production on *Water Quality* begins in spring 2009, followed by a

video-based version of *Fish Genetics*. The Division of Aquaculture will then have five video-based online courses available.

Also, some courses are being placed on iTunes University's server which allows students to download the classes to their iPods enabling them to study with no time or location boundaries.

Kudos to Drs. Durborow & Gomelsky For Successful Capacity Bldg. Grant

Our hats are off to Dr. Robert Durborow and Dr. Boris Gomelsky for having recently received a \$172,000 grant from the USDA Capacity Building Grants Program in Washington, D.C. These research scholars, who are part of the Division of Aquaculture, will utilize their grant award to prepare online courses which will focus on fish diseases and water quality management. ...Scholars such (as) these researchers greatly add to the richness of Kentucky State University.

*Herman E. Walston, Ed.D.,
KSU Director, Sponsored Programs*

Cincinnati Filmmaker Applauds Aquaculture's Innovative Recycling Efforts

(We received this message about "Cleaning Water... Growing Fish," a recent Aquaculture video production that examined KSU's collaboration with the Frankfort Wastewater Facility in growing paddlefish.)

"Over the weekend I watched the copy of *Cleaning Water* you sent me. It presents an interesting concept. That kind of double use and recycling it promotes seems like it will become increasingly imperative. I read a little weekly magazine called *Science News* and am always flabbergasted by the amount of research that goes on, the diversity of topics, and the energy of humanity... and that we Americans have enough resources to afford the research, which in turn provides us more resources and better living. I immediately thought of Aquaculture's work in that context. A lot of effort and ingenuity has gone into this one small step towards a better future for aquaculture and all of us. Well done!" Steve M., Maslowski Productions, Cincinnati, OH

KSU AQUACULTURE RESEARCH CENTER

EXECUTIVE SUMMARY

KSU Receives Permit For Processing Lab



Cecil Butler, Tasia Smith and Dr. Steve Mims examine recently processed paddlefish.

The certified Aquaculture Processing Lab is now officially permitted. Angela Caporelli has written HACCP plans for each fish species and process. The HACCP requires work-sheets to be kept during each project in the lab. Cleanliness is very important in order to maintain KSU's status as a food processing lab. It will be inspected on a regular basis.



Reviewers Like Webster Book

Dr. Carl Webster is co-editor of the newly published "Alternative Protein Sources in Aquaculture Diets." The 571-page book, published by The Haworth Press, received a favorable pre-publication review from *Fish Nutritionist*. "Timely... Provides both the positive and negative aspects of using the various protein sources. The detail given in each chapter is very good... Useful as a resource and reference for fish nutrition researchers as well as fish feed formulators."

Positive Paddlefish Research Continues with Partners

More than 35,000 phase II paddlefish were raised at the Frankfort Wastewater Treatment Plant (FWWTP) in 2007/08 in cooperation with Aquila International, Inc. and the city of Frankfort. Fish production was increased three-fold from that in 2006. Aquila was able to contract with three municipalities for about 800 acres of water for stocking paddlefish for reservoir ranching. Also, Wilson Catfish farms in western Alabama purchased paddlefish from Aquila for an in-pond raceway demonstration (funded by Catfish Grower Association and Auburn University).

In spring 2008, hybrid striped bass fry (50,000 HSB) were stocked in a 1.2 million L digester tank and produced 8,500 fingerlings that averaged 60 grams. Fish were sold to a producer in Indiana and stocked in cages.



Teachers from Jefferson County learn the latest in aquaculture inside KSU's mobile classroom.

K-12 Education Program Serves Students, Teachers & Farmers

The K-12 Aquaculture Education Program, coordinated by William Bean, has assisted teachers, students, and farmers from 73 Kentucky counties via in-person visits, tour group, e-mails and phone.

Total miles logged for on-site visits is estimated at 5,500 for the past year. A major addition to the effort is an interactive Web site (www.ksuaquaed.org) that averages about 1,756 hits per month.

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EXECUTIVE SUMMARY

Students Learn Academics... Learn to Serve Community

Year's Headlines

Aquaculture Gets Clean Sweep at Ky. Academy of Science Competition

Russell Neal and Kim Trosvik Named Outstanding Grad Student(s)

Five Grad Students Present at WAS Conference in Orlando

Students Experience Ukraine Aquaculture



Dave and Kim flanked by hosts.

A joint effort between Kentucky State University and the Ukrainian Academy of Agrarian Sciences led to a month-long internship for two KSU Aquaculture grad students, Kimberly Trosvik and David Wood.

The students were able to travel around Ukraine, and see how aquaculture is conducted in developing countries and assist with operations at three separate hatcheries. Kim and Dave gave a presentation on the current research at KSU and also appeared in a short television interview. They were able to visit many Ukrainian landmarks, such as Sofievka, and the Lavra.

On their way home, Kimberly and David also visited the Research Institute of Fish Culture and Hydrobiology in Vodnany, Czech Republic, where they assisted with sturgeon and carp spawning, exchanged spawning techniques and shared current research from KSU.



Helping special needs kids fish

Grad students volunteered to help special needs kids fish for the first time at Camp Crooked Creek in Jefferson County. Travis Bailey helps a student bait a hook.

Josh Patterson, Russ Neal and Nat Bussen helped in loading over 100 boxes of clothes that were donated by



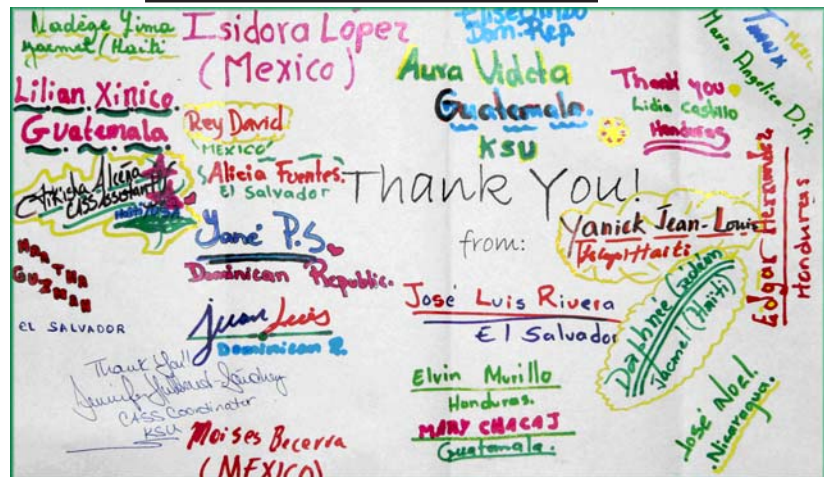
Good Shepherd Catholic Church's St. Vincent DePaul Society to the Lexington Rescue Mission.

Giving the needy a hand

Visiting the Ky. Capitol, Josh Patterson presents a gift basket of Kentucky commodities to C.B. Embry Jr, (R), 17th District, as part of the Farm Bureau's annual *A Taste of Kentucky* program.



Firsthand marketing experience



This colorful thank you card came from grateful CASS students.

Among the many worthwhile projects of the Aquabreds was their recent clothing drive for new CASS students arriving from Latin America. Obviously, temperature difference can be dramatic. Both administrators and students sent their thanks to members of the Aquabreds for their thoughtful contributions to the students.

CASS (Cooperative Association of States for Scholarships) provides two-year technical training to socio-economically disadvantaged but talented individuals from Haiti, Honduras, El Salvador, Mexico, Guatemala, and the Dominican Republic.

KSU AQUACULTURE RESEARCH CENTER

PERSONNEL

Harold R. Benson, Ph.D., Director of Land Grant Program

Charles Bennett, Ph.D., Dean of Math, Science, Technology and Health

Kimberly Holmes, Ph.D., Associate Director of Land Grant Program

James H. Tidwell, Ph.D., Professor, Chair/Division of Aquaculture, Principal Investigator,
freshwater shrimp & largemouth bass

Sid Dasgupta, Ph.D., Associate Professor, Economics & Marketing.

Robert M. Durborow, Ph.D., Professor, State Specialist for Aquaculture,
Fish Disease Diagnostic Laboratory

Boris Gomelsky, Ph.D., Associate Professor, Principal Investigator, genetics, crappie and koi

Steven D. Mims, Ph.D., Professor, Principal Investigator, paddlefish and sturgeon

Carl D. Webster, Ph.D., Professor, Principal Investigator, aquaculture nutrition

William A. Wurts, Ph.D., Senior State Specialist for Aquaculture, western Kentucky

Forrest S. Wynne, M.S., State Specialist for Aquaculture, western Kentucky

William Bean, M.S., K-12 Aquaculture Educator/Recruiter for aquaculture programs

Shawn Coyle, M.S., Co-Investigator, freshwater prawn and largemouth bass projects

Richard Onders, M.S., Co-Investigator, paddlefish, sturgeon, and crappie projects

Tod Porter, M.A., Multimedia Producer for Aquaculture programs

Ken Thompson, M.S., Co-Investigator, red claw crayfish and hybrid striped bass nutrition

Leigh Anne Bright, M.S., Research Assistant

Nathan Cochran, M.S., Distance Learning Specialist

Linda Metts, B.S., Research Assistant

Kyle Schneider, B.S., Research Assistant

William Stilwell, B.S., Manager, Environmental Education Center

Charles Weibel, B.S., Digital Graphics Specialist

Daniel Yancey, B.S., Farm Manager, Aquaculture Research Facility

Karla Johnson, A.S., Administrative Assistant II

Carolyn Bolton, A.S., Administrative Assistant II

Robert Janes, Fish Culture Assistant

Pauline Jackson, Maintenance Worker III

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LONG-TERM VISION

Kentucky State University will remain the lead institution for aquaculture in Kentucky, and one of the premier programs in the nation. Involvement of on-site students in relevant, real-world research will continue. Outreach through video and Web-based courses will be expanded.

FACILITIES

Kentucky State University's Aquaculture Research Center is the only such facility in the Commonwealth of Kentucky. Facilities at the Aquaculture Research Center include 33 research ponds (24, 1/10th acre and nine 1/20th acre). A 3,000-square-foot hatchery houses spawning, holding, and experimental tanks. A 4,000-square-foot office/laboratory building includes a state-of-the-art histology laboratory, offices, and conference/classroom space. The 3,500-square-foot nutrition laboratory contains a wet laboratory for aquarium studies, a feed preparation/water quality laboratory, office/computer space, and an analytical laboratory. A 3,000-square-foot greenhouse facility contains temperature control systems capable of evaluating three temperature levels in eighteen 950-gallon tanks, as well as recirculating shrimp hatchery system. A second 3,000-square-foot greenhouse, built in 1998, contains four 10,000-gallon tanks for broodstock holding and conditioning. A 120,000-gallon, 24-tank facility, designed as a pond microcosm facility, was completed fall in 2003. These facilities may be utilized for student research and teaching.

A classroom/multi-purpose building for instruction, research, library resources, and distance learning was completed in 2005. The building also includes a Fish Disease Diagnostic Laboratory that is fully equipped with incubators, microscopes, and video microscopy. It is used to provide disease diagnostics to producers from across Kentucky and the surrounding region.

KSU AQUACULTURE RESEARCH CENTER

ORGANIZATIONAL STRUCTURE

The Division of Aquaculture is the only program at KSU that addresses all three of the traditional Land Grant university roles: research, teaching, and extension. Research and extension responsibilities are administratively housed within the Land Grant Program under the supervision of Dr. Harold Benson, Director, and Dr. Kimberly Holmes, Associate Director, of the Land Grant Program. Academics are administratively housed within the Division of Aquaculture, which is supervised by a Division Chair, Dr. James H. Tidwell. The Division is a unit within the College of Math, Science, Technology and Health, administered by the Dean, Dr. Charles Bennett. Both of the Land Grant functions (research and extension) and the academic functions are supervised by the Vice-President for Academic Affairs and Provost, Dr. James Chapman, and President, Dr. Mary Evans Sias.

RESEARCH

The goal of the KSU Aquaculture Research Program is to increase the knowledge-base in aquaculture, and thereby facilitate increases in farm income and the productivity of on-farm water resources in Kentucky and around the world. This is to be accomplished by examining and developing production technologies suitable for the climatic and physiographic conditions prevalent in Kentucky and similar regions. To meet these goals, the KSU Aquaculture Research Program's initial studies were directed toward the development and adaptation of pond and cage-culture techniques for channel catfish and trout, as the principal species of the Kentucky fish-farming industry.

The USDA expects newly developing aquaculture species to experience rapid expansion in the next decade by adapting existing production and processing systems already developed for

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RESEARCH (cont)

catfish and trout. Development of these species is expected to occur largely in states, like Kentucky, which do not currently have well-established production, processing, or marketing infrastructures for aquaculture.

The intent of the program's research, extension, and education activities is to assist Kentucky producers in this future development by investigating alternative aquaculture species that can be produced profitably in Kentucky. Species evaluated in recent years include blue catfish, walleye, yellow perch, brook trout, hybrid bluegill, largemouth bass, paddlefish, tilapia, freshwater prawn, crappie, sturgeon, hybrid striped bass, and red claw crayfish. **The KSU Aquaculture Program is widely recognized as being the lead program nationally and internationally in the areas of paddlefish culture, freshwater prawn culture, production of largemouth bass on-feed, and fish meal replacement research for catfish and hybrid striped bass.**

EXTENSION

Research information is of little practical value unless it is communicated to producers in a useful and understandable form. Training and extension programs serve as the primary means of transferring this knowledge from the researchers to the end users. KSU Aquaculture Specialists are integrated into the UK Cooperative Extension System. Specialists are housed in western Kentucky at the UK Princeton Research and Extension Center (Dr. Wurts), central Kentucky at KSU's main campus (Dr. Durborow), and Mr. Forrest Wynne is stationed in Mayfield, in the Purchase Area of western Kentucky, to assist and support the catfish industry. Extension specialists recorded over 100,000 extension contacts during 2007-2008.

KSU AQUACULTURE RESEARCH CENTER

UNDERGRADUATE AND GRADUATE EDUCATION

Kentucky State University began offering an undergraduate Minor in Aquaculture in 1992 within the Division of Math and Sciences. No other university in the Commonwealth offers an aquaculture curriculum. In 1999, the Council on Post-Secondary Education approved KSU to offer a Master of Science Degree in Aquaculture/Aquatic Science. KSU now has nine full-time graduate students, and over 20 part-time graduate students, including students taking Internet courses. The program awarded its first M.S. degree in May 2002, and has now awarded 17 Master of Science degrees.

CLASSES TAUGHT

FALL 2007

Undergraduate Courses

Gomelsky – AQU 407 – Fish Genetics
Gomelsky – BIO 407 – Fish Genetics
Mims – AQU 412 – Fish Morphology & Physiology
Mims – BIO 412 – Fish Morphology & Physiology
Sluss – BIO 413 – Aquatic Ecology
Tidwell – AQU 422 – Principles of Aquaculture
Tidwell – BIO 422 – Principles of Aquaculture
Durborow – AQU 460 – Water Quality
Durborow – BIO 460 – Water Quality
Gould – AQU 480 – Intro to GIS

Graduate Courses

Durborow – AQU 560 – Water Quality
Gomelsky – AQU 507 – Fish Genetics
Mims – AQU 512 – Fish Morphology & Physiology
Sluss – AQU 513 – Aquatic Ecology
Tidwell – AQU 522 – Principles of Aquaculture
Zourakis – AQU 580 – Intro to GIS



SPRING 2008

Undergraduate Courses

Dasgupta – AQU 425 – Aquaculture Economics & Marketing
Dasgupta – BIO 425 – Aquaculture Economics & Marketing
Gomelsky/Mims – AQU 427 – Fish Reproduction & Spawning Techniques
Gomelsky/Mims – BIO 427 – Fish Reproduction & Spawning Techniques
Gould – AQU 480 – Intro to GIS
Tidwell – AQU 422-V1 – Principles of Aquaculture Online
Tidwell – BIO 422 – V1 – Principles of Aquaculture Online
Webster – AQU 421 – Fish Nutrition
Webster – BIO 421 – Fish Nutrition

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UNDERGRADUATE AND GRADUATE EDUCATION (cont)

SPRING 2008

Graduate Courses

Dasgupta – AQU 525 – Aquaculture Econ & Marketing
Gomelsky/Mims – AQU 527 – Fish Reproduction & Spawning Tech
Tidwell – AQU 522-V1 – Principles of Aquaculture Online
Webster – AQU 521 – Fish Nutrition
Zourakis – AQU 580 – Intro to GIS

SUMMER 2008

Undergraduate Courses

Durborow – AQU 414-V1 – Basics of Fish Disease
Durborow – BIO 414-V1 – Basics of Fish Disease
Tidwell – AQU 422-V1 – Principles of Aquaculture
Tidwell – BIO 422-V1 – Principles of Aquaculture

Graduate Courses

Durborow – AQU 514-V1 – Basics of Fish Disease
Tidwell – AQU 522-V1 – Principles of Aquaculture



K-12 OUTREACH

Of the 120 counties that comprise the KSU service community, the K-12 Aquaculture Education program has assisted teachers, students, and farmers from 73 of these counties via in-person visits, tour groups, e-mail and phone. Personal visits include in-classroom presentations demonstrating practical uses of biological, chemical, and mathematical core concepts as defined by the Kentucky Department of Education (Aug. 2006). Other visits using the Mobile Classroom were also performed at 23 schools and 10 farm demonstration/field days. Total travel for in-person visits is estimated at 5,500 miles. Tours of the Aquaculture Research Center conducted by the K-12 Aquaculture Education Program numbered 23 groups. Some of these individuals were educators or farmers, but almost 1800 were K-12 students. Communication with educators and students consisted of e-mails and phone calls/faxes.

KSU AQUACULTURE RESEARCH CENTER

K-12 OUTREACH (cont)

Another major contribution to the Aquaculture Education Program is the completion of the K-12 Aquaculture Education Web site. This medium has allowed more widespread use of aquaculture curriculum in Kentucky's schools. Since its inception in May 2008, the site has averaged 1756 hits per month, with the number of hits growing each month. This Web site is constantly updated and expanded, with future goals including the addition of PowerPoint presentation of aquaculture topics, video clips of water quality testing, photo galleries of aquatic plants and animals, equipment, and culture environments.

ENVIRONMENTAL EDUCATION CENTER

Within Land Grant, our program area is described as "Aquaculture and Natural Resources." With that charge, responsibilities for KSU's Environmental Education Center have been placed within the Division of Aquaculture. This 300-acre property provides opportunities for students – from kindergarten through graduate school – to learn about the environment. Two Capacity Building Grants will use these facilities to develop new field courses for KSU students in ecology and environmental sciences. This is particularly important to student populations who are especially poorly represented in the natural resources and environmental professions—urban and minority students. Facilities also are being designed to ensure access and learning experiences for students who are physically, visually, or hearing impaired. For those who can't come to the KSU-EEC, the mobile EEC unit can go to them. During 2007/08, we have had over 1,000 visitors to the EEC (20 groups), and the Mobile EEC has made over 7,500 contacts in 50 classes in 14 counties across Kentucky.

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PROFESSIONAL SOCIETIES AND TECHNICAL ASSOCIATIONS

Shawn Coyle serves on the Board of Directors for the U.S. Freshwater Prawn and Shrimp Growers Association, Inc.

Dr. Steve Mims and Forrest Wynne are members of the Technical Committee for Kentucky of USDA's Southern Region Aquaculture Center (SRAC).

Dr. Jim Tidwell is a Past-President of the U.S. Aquaculture Society and the World Aquaculture Society.

Dr. Carl Webster is a Past-President of the U.S. Aquaculture Society.

SCIENTIFIC JOURNALS

The Aquaculture Program at KSU plays an integral role in the major scientific aquaculture journals in the United States. Dr. Carl Webster is Editor of the "Journal of the World Aquaculture Society." Dr. Steve Mims and Dr. Boris Gomelsky serve as Associate Editors for the "North American Journal of Aquaculture."

INTERNATIONAL ACTIVITIES

Dr. Steven D. Mims co-authored, with Dr. Akos Horvath and Dr. Bela Urbanyi, a book chapter entitled "Cryopreservation of sperm from species of the order Acipenseriformes" in a newly released international book titled "Methods in Reproductive Aquaculture: Marine and Freshwater Species." Drs. Horvath and Urbanyi are from the Department of Fish Culture, Szent Istvan University, Pater Karoly u.l. Godollo, Hungary. Editors Elsa Cabrita, Vanesa Robles and Paz Herraiez. CRC Press Taylor and Francis Group, Boca Raton, Fla., 549 pp.

KSU AQUACULTURE RESEARCH CENTER

INTERNATIONAL ACTIVITIES (Cont)

Dr. Boris Gomelsky and Dr. Steven Mims, in collaboration with Dr. Otomar Linhart, Director of the Research Institute of Fish Culture and Hydrobiology, have developed and submitted a proposal entitled "Application of sex-reversal and proteomics in cryopreserved sperm for caviar production." This proposal is a Joint Research Project under the U.S. and Czech Scientific and Technological Cooperation program. Funding would allow travel, per diem and operating cost for professional and student exchange between countries in completing this four-year project (requested \$42,000).

Dr. Tidwell is a co-editor of the book *Freshwater Prawn Culture: the Farming of Macrobrachium rosenbergii*, the Second Edition. The other co-editors are Michael New from Britain, Dr. Wagner Valenti from Brazil, Dr. Mohanakumuran Nair from India and Dr. Lou D'Abramo from the U.S.

The Division of Aquaculture's online courses have now been taken by students in 15 countries including Zimbabwe, Nigeria, Turkey, Peru, Saudi Arabia, Singapore, Romania, Pakistan, Netherlands and Belize.

DISTANCE LEARNING

Many students from all over the United States and some foreign countries have been involved in KSU's Aquaculture Program by taking the online (Internet) courses. Online *Fish Genetics* was taught by Dr. Boris Gomelsky in the fall semesters of 2007 & 2008. During those years, 26 students from 16 U.S. states and five foreign countries successfully finished the Fish Genetics online course. Dr. Jim Tidwell taught the online *Principles of Aquaculture* course in

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DISTANCE LEARNING (Cont)

the 2007 fall semester, and spring, summer & fall semesters of 2008. A total of 39 students from 10 U.S. states and five foreign countries were enrolled. Also, a new online course, *Basics of Fish Diseases*, was taught by Dr. Robert Durborow during the 2008 summer semester. In total, five students from four U.S. states were enrolled. In addition, KSU Aquaculture is in production on two more online courses: *Fish Reproduction and Spawning Techniques*, and *Water Quality Management*, which will be available in the 2009 fall semester. **To date, 157 students from 36 states and 15 foreign countries have taken Division of Aquaculture online courses.**

JOURNAL PUBLICATIONS – PUBLISHED

(Student names in bold – all sections)

- Amoah, A.**, S.D. Coyle, C.D. Webster, R.M. Durborow, L.A. Bright, and J.H. Tidwell. 2008. Effects of graded levels of carbohydrate on growth and survival of largemouth bass *Micropterus salmoides*. *Journal of the World Aquaculture Society* 39(3):397-405.
- Berra, T.M., B. Gomelsky, B.A. Tompson, and D. Wedd, 2007. Reproductive anatomy, gonad development and spawning seasonality of nursery fish, *Kurtus gullivery* (Perciformes; Kurtidae). *Australian Journal of Zoology*, 55:211-217.
- Chen, G.**, Y.L. Xiong, **B. Kong**, M.C. Newman, K.R. Thompson, L.S. Metts, and C.D. Webster. 2007. Microbiological and physicochemical properties of red claw crayfish (*Cherax quadricarinatus*) stored in different package systems at 2°C. *Journal of Food Science*, 72:442-449
- Danaher, J.**, J.H. Tidwell, S.D. Coyle, S. Dasgupta, and P. Zimba. 2007. Effects of two densities of caged monosex Nile tilapia *Oreochromis niloticus* on water quality, phytoplankton populations and production when polycultured with *Macrobrachium rosenbergii* in temperate ponds. *Journal of the World Aquaculture Society* 38(3):335-459.
- Horvath, A., W.R. Wayman, J.C. Dean, B. Urbanyi, T.R. Tiersch, S.D. Mims, D. Johnson and J.A. Jenkins. 2008. Viability and fertilizing capacity of cryopreserved sperm from three Northern American Acipenseriform species: a retrospective study. *Journal of Applied Ichthyology* 224 (2008):443-449.
- Kong, B.**, Y.L. Xiong, and C.D. Webster. 2007. Influence of gender and spawning on thermal stability and proteolytic degradation of proteins in Australian red claw crayfish (*Cherax quadricarinatus*) muscle stored at 2°C. *International Journal of Food Science and Technology*. 42:1073-1079.

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JOURNAL PUBLICATIONS – PUBLISHED (Cont)

- Metts, L.S., K.R. Thompson, Y.L. Xiong, **B. Kong**, C.D. Webster, and Y.J. Brady. 2007. Use of alfalfa hay, compared to feeding practical diets containing two protein levels, on growth, survival, body composition, and processing traits of Australian red claw crayfish (*Cherax quadricarinatus*) grown in ponds. *Journal of the World Aquaculture Society*. 38: 218-230.
- Skudlarek, N., N. Cochran**, M. Larimore, S. Marple, S. Coyle, and J. Tidwell. 2007. Alternatives to freeze dried krill in the feed training phase of largemouth bass production. *North American Journal of Aquaculture* 69(4):395-399.
- Tidwell, J.H., S.D. Coyle, and L.A. Bright. 2007. Effects of different types of dietary lipids on growth and fatty acid composition of largemouth bass. *North American Journal of Aquaculture* 69: 257-264.
- Tidwell, J.H. and S.D. Coyle. 2008. Impact of substrate physical characteristics on grow out of freshwater prawn, *Macrobrachium rosenbergii*, in ponds and pond microcosm tanks. *Journal of the World Aquaculture Society* 39(3):406-413.

JOURNAL PUBLICATIONS – ACCEPTED

- Cochran, N.J.**, S.D. Coyle, and J.H. Tidwell. In Press. Evaluation of reduced fish meal diets for second-year growth of the largemouth bass *Micropterus salmoides*. *Journal of the World Aquaculture Society*.
- Pine, H., W. Daniels, M. Jiang, D. Davis, and C.D. Webster. In Press. Replacement of fish meal with poultry by-product meal as a protein source in pond-raised sunshine bass, *Morone chrysops* X *M. saxatilis*, diets. *Journal of the World Aquaculture Society*.
- Thompson, K.R., S.D. Rawles, L.S. Metts, R. Smith, A. Wimsatt, A.L. Gannam, R.G. Twibell, R.B. Johnson, Y.J. Brady, and C.D. Webster. In Press. Digestibility of dry matter, protein, lipid, and organic matter of two fish meals, two poultry by-product meals, soybean meal, and distiller's grains with solubles in practical diets for sunshine bass, *Morone chrysops* X *M. saxatilis*. *Journal of the World Aquaculture Society*.
- Thompson, K.R., L.S. Metts, L.A. Muzinic, S. Dasgupta, Y.J. Brady, and C.D. Webster. In Press. Use of turkey meal as replacement of menhaden fish meal in practical diets for sunshine bass (*Morone chrysops* X *M. saxatilis*) grown in cages. *North American Journal of Aquaculture*.

GRANTS

- Mims, S.D. 2007. Collaboration with Angela Caporelli (Ky. Dept. of Agriculture) on a grant entitled "Processing Smoked Freshwater Fish Products and Market Development of these Value-Added Products in the Great Lakes and Northeast Regions of the United States." Funded through USDA-FSMIP.
- Mims, S.D. 2007. Submitted Preproposal and Interview, "Commercial Production of Gynogenetic Paddlefish for the Caviar Industry," KSTC-KSEF Commercialization Fund, Lexington, Ky. \$105,000. Invited for full proposal submission. Not Funded.

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GRANTS (Cont)

- Mims, S.D. 2008. Submitted grant to KSEF entitled "Reuse Technology at a Wastewater Treatment Plant for Fish Culture Implementation." Asking \$ 80,861. Funded.
- Mims, S.D. 2008. Submitted preproposal to SARE entitled "Reuse Technology of a Decommissioned Wastewater Facility for Aquaculture." Asking \$143,340. Not Funded.
- Gomelsky, B. 2008. Submitted research proposal "Genetic Improvement of Color Traits, Induced Polyploidy and Field Trials for Ornamental (Koi) Carp" to USDA Capacity Building Grant. Asking \$293,074. Not Funded.
- Magel, T., J.H. Tidwell and N. Paskins, 2007. Submitted a Capacity Building Grant entitled "Increasing Access to Geographic Information Systems in the Agricultural Sciences: Creating an Online Certificate Program at Kentucky State University." \$199,970. Funded
- Tidwell, J.H. and W.E. Stilwell. 2007. Submitted a grant entitled "Development of an Accessible Trail for Persons with Disabilities at KSU-EEC." The Kentucky Heritage Land Conservation Board. \$38,800. Funded.
- Tidwell, J.H. and W.E. Stilwell. 2007. Submitted a grant entitled "Development of an Accessible Trail for Persons with Disabilities at KSU-EEC." The Kentucky School for the Blind Charitable Foundation. \$33,000. Funded.
- Tidwell, J.H. and T. Porter. 2007. Submitted a USDA Capacity Building Grant entitled "Evaluation of Podcasting for Teaching Natural Resources and Agriculture to Diverse Student Populations." \$189,475. Not funded.
- Tidwell, J.H., S.D. Coyle, and A. Caporelli. 2008. Submitted a grant entitled "Development of technologies to permit successful transport of live fish into urban ethnic markets during periods of low supply through investigation of physiological parameters leading to stress and mortality" to the USDA Federal-State Market Improvement Program. \$49,545. Not funded.
- Webster, C.D. 2008. Grant entitled "Evaluation of organic diets containing soybean meal and yeast, and diets containing soybean meal as the sole protein source (with and without supplemental lysine and methionine) in practical diets for Nile tilapia (*Oreochromis niloticus*)." Kentucky Soybean Board. Funded for \$40,000.
- Webster, C.D. 2008. USDA 1890 Institution Capacity Building Grant. Submitted pre-proposal to KSU Grant Review Committee. Pre-proposal rejected for submission to USDA.
- Webster, C.D., Thompson, K.R., and Xiong, Y.L. 2008. "Development of Innovative Packaging and Storage Technologies to Improve Food Safety and Increase Storage Quality of Red Claw Crayfish: A Model for Seafood and other Animal Protein," USDA Federal-State Marketing Improvement Program (asking \$50,400).

BOOK CHAPTERS AND BOOKS PUBLISHED OR IN PRESS

Edited or Co-Edited

- New, M. B., Valenti, W. C., Tidwell, J. H., D'Abramo, L. R. and M. Kutty (Eds.). (In Prep) Freshwater Prawn Culture: The farming of *Macrobrachium rosenbergii*. 2nd Edition. Blackwell Science.

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BOOK CHAPTERS AND BOOKS PUBLISHED OR IN PRESS (Cont)

Chapters Authored

- Lee, C.S., C. Lim, and C.D. Webster. In Press. Alternative Protein Sources in Aquaculture Diets. Haworth Press, Binghamton, New York.
- Tidwell, J.H., S.D. Coyle, D. Yasharian, and S. Dasgupta. 2007. Effects of stocking different fractions of size-graded juvenile prawns on production and population structure. pp. 394-403 *In* C. M. Nair, D. D. Nambudiri, S. Jose, T. M. Sankara, K. V. Jayachandran and K. R. Salin (eds.), *Freshwater Prawns: Advances in Biology, Aquaculture and Marketing*, Proceedings of the International Symposium on Freshwater Prawns, August 20-23, 2003, Kochi, Kerala, India. Allied Publishers, New Delhi, India.
- Tidwell, J. H. and L. R. D'Abramo. (In Press) Grow-out Systems – Culture in Temperate Zones. *In* Freshwater Prawn Culture: The farming of *Macrobrachium rosenbergii*. New, M. B., Valenti, W. C., Tidwell, J. H., D'Abramo, L. R. and S. Nair (Eds.). 2nd Edition. Blackwell Science.
- Webster, C.D., K.R. Thompson, L.S. Metts, and L.A. Muzinic. 2008. Use of distiller's dried grains with solubles and brewer's yeast in aquaculture diets. *In* Alternative Protein Sources in Aquaculture Diets. Haworth Press, Binghamton, New York

PROFESSIONAL TECHNICAL MAGAZINES

- Metts, L.S., K.R. Thompson, L.A. Muzinic, and C.D. Webster. In Press. Effects of feeding practical diets containing different protein levels, with or without fish meal, on growth and survival of Australian red claw (*Cherax quadricarinatus*). *World Aquaculture*.
- Mims, S.D., R.J. Onders, B.T. Parrott and W.A. Scalf. In press. Reuse of Wastewater Facilities of Aquaculture. *Fish Farming International*.
- Thompson, K.R., L.S. Metts, L.A. Muzinic, and C.D. Webster. 2007. Use of turkey meal as partial or total replacement of fish meal in diets for sunshine bass. *World Aquaculture* 38(4):36-38, 67.
- Thompson, K.R., L.S. Metts, and C.D. Webster. 2007. Fish meal replacement in sunshine bass feeds: A win-win for the industry and the environment. *Global Aquaculture Advocate* 10(4):76-78.
- Tidwell, J.H. and S.D. Coyle. 2007. Practical diet development for the largemouth bass. *International Aqua Feed*, Vol. 10(4):38-42.
- Wynne, F. S. 2007. Use of Aeration and Water De-stratification Devices in Recreational Ponds. *World Aquaculture* 38(3)35-38.

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STUDENT AWARDS

Graduate Students

Neal, Russell S., Brian M. Boudreau, Shawn D. Coyle, and James H. Tidwell. 2007. Evaluation of stocking density and light intensity on the growth and survival of the Pacific White Shrimp (*Litopenaeus vannamei*) reared in zero exchange systems. 93rd Annual Kentucky Academy of Science, Louisville, Ky., November 8-10. **Russell Neal 2nd Place Graduate Oral Presentation.**

Wood, David R., Russell S. Neal, Brian M. Boudreau, Shawn D. Coyle, and James H. Tidwell. 2007. Performance of Pacific White Shrimp (*Litopenaeus vannamei*) raised in static heterotrophic tank systems exposed to different light sources and intensities. 93rd Annual Kentucky Academy of Science, Louisville, Ky., November 8-10. **David Wood 1st Place Graduate Oral Presentation.**

FACULTY AWARDS

Tidwell, J.H. 2008. Selected as the recipient of the 2008 Alumnus of the Year Award for the College of Forest Resources at Mississippi State University. The Alumnus of the Year program recognizes and honors those who have achieved the highest levels of accomplishment in their profession.

Pomper, K.W., L. Lu, K. Kaul, N. Rajendran, and J. Tidwell. 2008. Development of biotechnology courses to enhance aquaculture and biology programs and recruit STEM students to Kentucky State University. AEA/ARD Land Grant Conference, Memphis, Tenn., June 8-11. Chosen as a Select Oral Presentation.

Tidwell, J.H., T. Porter, **N. Cochran**, and C.R. Weibel. 2008. Innovative technologies (video-based online courses and podcasting) for delivering STEM subjects to diverse student populations. AEA/ARD Land Grant Conference, Memphis, Tenn. June 8-11. Chosen as a Select Oral Presentation.

PUBLISHED ABSTRACTS

Coyle, S.D., **J. Greene**, L.A. Bright, and J.H. Tidwell. 2008. Development of best management practices using therapeutants for waterless air transport of live market-size freshwater prawn *Macrobrachium rosenbergii*. Aquaculture America 2008, Orlando, Fla., Book of Abstracts, p. 74.

Coyle, S.D., K. Schneider, **N. Cochran**, and J H. Tidwell. 2008. Growth and survival of wild, domestic, and hybrid strains of largemouth bass (*Micropterus salmoides*) fingerlings during the feed training phase. Aquaculture America 2008, Orlando, Fla., p. 76.

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PUBLISHED ABSTRACTS (Cont)

- Gomelsky, B. 2008. Application of temperature-dependent index of mitotic interval ($7\hat{i}$) in studies on chromosome set manipulation in fish. Aquaculture America 2008, Orlando, Fla., Book of Abstracts, p. 12.
- Neal, R. S.**, B.M. Boudreau, S.D. Coyle, and J. H. Tidwell. 2008. Evaluation of stocking density and light intensity on the growth and survival of the Pacific white shrimp (*Litopenaeus vannamei*) reared in zero exchange systems. Aquaculture America 2008, Orlando, Fla., Book of Abstracts, p. 257.
- Pomper, K. W., L. Lu, K. Kaul, N. Rajendran, and J. Tidwell. 2008. Development of biotechnology courses to enhance aquaculture and biology programs and recruit STEM students to Kentucky State University. The 1890 Land Grant System: Addressing Universal Issues through Science and Engagement. AEA/ARD Land Grant Conference, Memphis, Tenn., Book of Abstracts, p. 28.
- Tidwell, J.H., T. Porter, **N. Cochran**, and C.R. Weibel. 2008. Innovative technologies (video-based online and podcasting) for delivering STEM subjects to diverse student populations. The 1890 Land Grant System: Addressing Universal Issues through Science and Engagement. AEA/ARD Land Grant Conference, Memphis, Tenn., Book of Abstracts, p. 27.
- Wood, D.R.**, **R.S. Neal**, B.M. Boudreau, S.D. Coyle, and J. H. Tidwell. 2008. Performance of Pacific white shrimp (*Litopenaeus vannamei*) raised in static heterotrophic tank systems exposed to different light sources and intensities. Aquaculture America 2008, Orlando, Fla., Book of Abstracts, p. 438.
- Wurts, W. 2007. Polyculture of paddlefish *Polyodon spathula* in ponds used for low-input production of freshwater shrimp. Aquaculture America 2008, Orlando, Fla., Book of Abstracts, p. 439.

EXTENSION AND LAY PUBLICATIONS

- Dasgupta, S. and S. Skelton. (2007) Pastured Poultry: Example Annual Budget for a Small-Scale Farm. http://www.kysu.edu/land_grant/Pastured%20PoultryBudget.pdf
- Dasgupta, S. and S. Skelton. (2007) Small Scale Pastured Poultry: A Synopsis. http://www.kysu.edu/land_grant/Pastured%20Poultry%20Management.pdf
- Dasgupta, S. and K. Andries. (2007) Beef Cattle Backgrounding: Example Annual Budget for a Small-Scale Farm. http://www.kysu.edu/land_grant/BackgroundingBudget.pdf
- Dasgupta, S. and K. Andries. (2007) Cow-Calf Farming on a Small Scale: A Synopsis. http://www.kysu.edu/land_grant/Beef%20Cattle%20Management.pdf

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EXTENSION AND LAY PUBLICATIONS (Cont)

- Dasgupta, S. and K. Andries. (2007) Small-Scale Meat Goat Management: A Synopsis. http://www.kysu.edu/land_grant/Meat%20Goat%20Management.pdf
- Ogunsanya, T.**, S. Dasgupta, and **N. Bussen**. (2007) Marketing Baitfish in Kentucky. <http://www.ksuaquaculture.org/PDFs/Publications/Baitfish%20handout.pdf>
- Durborow, R.M. and B. Gomelsky. 2007. Koi Production Demonstration. Aquatic Farming Newsletter, 20(2):2.
- Durborow, R.M. 2007. 2006 Fish disease cases diagnosed at the Kentucky State University Fish Disease Diagnostic Laboratory. Kentucky Aquatic Farming Newsletter, 20(2):3.
- Durborow, R.M. 2007. Keeping ponds pretty (and usable): the ongoing battle with unwanted aquatic vegetation. Kentucky Aquatic Farming Newsletter, 20(2):6-7.
- Durborow, R.M., C.S. Tucker, B. Gomelsky, R.J. Onders, and S.D. Mims. 2007. Aquatic Weed Control in Ponds. 24 p. Prepared the January 2008 revision.
- Durborow, R.M. 2008. Edited Kentucky Aquatic Farming: A Newsletter for Kentuckians Interested in Improving Fish and Shellfish Production, and Pond Management. Vol. 21, No 1, Spring 2008. Mailed to over 1200 recipients.
- Durborow, R.M. 2008. Kentucky MarketMaker: Buy and Sell Aquaculture Products at the New Online Marketing Web Site. Kentucky Aquatic Farming, Vol. 21, No 1, pp. 1-2.
- Durborow, R.M. 2008. 2007 Fish Disease Cases Diagnosed at the Kentucky State University Fish Disease Diagnostic Laboratory. Kentucky Aquatic Farming, Vol. 21, No 1, pp. 8-9.

SCIENTIFIC PRESENTATIONS

- Bailey, T.J.**, K.R. Thompson, L.S. Metts, and C.D. Webster. 2008. Effects on growth, survival, and fatty acid composition of Australian red claw crayfish *Cherax quadricarinatus* when fed a practical diet containing different lipid sources. Aquaculture America 2008, Orlando, Fla., February 9-12.
- Bright, L.A., Coyle, S.D., and J.H. Tidwell. 2008. The effect of water temperature during feed training on growth and survival of fingerling largemouth bass (*Micropterus salmoides*). Alltech's 24th International Animal Health and Nutrition Symposium, April 20-23, Lexington, KY, USA.
- Coyle, S.D., **J. Greene**, L.A. Bright, and J.H. Tidwell. 2008. Development of best management practices using therapeutants for waterless air transport of live market-size freshwater prawn *Macrobrachium rosenbergii*. Aquaculture America '08, Orlando, Fla., February 9-12.
- Coyle, S.D., K. Schneider, **N. Cochran**, and J.H. Tidwell. 2008. Growth and survival of wild, domestic, and hybrid strains of largemouth bass (*Micropterus salmoides*) fingerlings during the feed training phase. Aquaculture America '08, Orlando, Fla., February 9-12.
- Durborow, R.M. 2008. Fish Health (PowerPoint presentation). Invited speaker at 2008 Aquaculture Forum, West Virginia University, Charleston, W Va., January 19, 2008. 75 attendees.

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SCIENTIFIC PRESENTATIONS (Cont)

- Durborow, R.M. 2008. Online Fish Disease Course at Kentucky State University. Presented at Aquaculture America 2008, Orlando, Fla., February 13, 2008.
- Gomelsky, B. 2008. Application of temperature-dependent index of mitotic interval ($7i$) in studies on chromosome set manipulation in fish. Aquaculture America 2008, Orlando, Fla., February 9-12, 2008.
- Metts, L.S., K.R. Thompson, S.D. Rawles, A.L. Gannam, and C.D. Webster. 2008. Apparent digestibility coefficients for dry matter, protein, lipid, and organic matter using various animal and plant protein sources by sunshine bass *Morone chrysops* x *Morone saxatilis*. Aquaculture America 2008, Orlando, Fla., February 9-12.
- Metts, L.S., K.R. Thompson, and C.D. Webster. 2008. Replacing menhaden fish meal in diets fed sunshine bass grown in ponds with poultry by-product meal and soybean meal with decreasing levels of protein. Alltech's 24th International Animal Health and Nutrition Symposium, Lexington, Ky., April 20-23.
- Neal, R.S.**, B.M. Boudreau, S.D. Coyle, and J.H. Tidwell. 2007. Evaluation of stocking density and light intensity on the growth and survival of the Pacific White Shrimp (*Litopenaeus vannamei*) reared in zero exchange systems. 93rd Annual Kentucky Academy of Science, Louisville, Ky., November 8-10.
- Neal, R.S.**, B.M. Boudreau, S.D. Coyle, and J.H. Tidwell. 2008. Evaluation of stocking density and light intensity on the growth and survival of the Pacific white shrimp (*Litopenaeus vannamei*) reared in zero exchange systems. Aquaculture America 2008, Orlando, Fla., February 9-12.
- Patton, S.**, S.D. Coyle and J.H. Tidwell. 2007. The effect of culture temperature on growth, survival and feed training success of fingerling largemouth bass, *Micropterus salmoides*. 93rd Annual Kentucky Academy of Science, Louisville, Ky., November 8-10.
- Pomper, K.W., L. Lu, K. Kaul, N. Rajendran, and J. Tidwell. 2008. Development of biotechnology courses to enhance aquaculture and biology programs and recruit STEM students to Kentucky State University. AEA/ARD Land Grant Conference, Memphis, Tenn., June 8-11. Chosen as a Select Oral Presentation.
- Redden, A.**, S.D. Coyle, L.A. Bright and J.H. Tidwell. 2007. Growth and survival of domestic, wild and hybrid strains of largemouth bass (*Micropterus salmoides*) fingerlings during the feed training phase. 93rd Annual Kentucky Academy of Science, Louisville, Ky., November 8-10.
- Schneider, K.**, S.D. Coyle, L.A. Bright, and J.H. Tidwell. 2008. Evaluation of the culture potential of an undomesticated northern strain of largemouth bass (*Micropterus salmoides*). Alltech's 24th International Animal Health and Nutrition Symposium, April 20-23, Lexington, Ky., USA.
- Thompson, K.R., S.D. Rawles*, L.S. Metts, Y.J. Brady, and C.D. Webster. 2008. Comparison of two different fecal collection methods for protein digestibility and amino acid availability coefficients of three animal protein sources for sunshine bass *Morone chrysops* x *Morone saxatilis*. Aquaculture America 2008, Orlando, Fla., February 9-12.

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SCIENTIFIC PRESENTATIONS (Cont)

- Thompson, K.R., Metts, L.S., and Webster, C.D. 2008. Body and fillet composition and immunity are not affected by lowering protein in diets for sunshine bass (*Morone chrysops* X *Morone saxatilis*) which contain no fish meal. Alltech's 24th International Animal Health and Nutrition Symposium, Lexington, Ky., April 20-23.
- Tidwell, J.H. 2008. Production of the freshwater prawn (*Macrobrachium rosenbergii*). Invited presentation to the 38th Annual Meeting of the Texas Aquaculture Association, El Campo, Tex., January, 16-18.
- Tidwell, J. H., T. Porter, **N. Cochran**, and C.R. Weibel. 2008. Innovative technologies (video-based online and podcasting) for delivering STEM subjects to diverse student populations. AEA/ARD Land Grant Conference, Memphis, Tenn., June 8-11. Chosen as a Select Oral Presentation.
- Trosvik, K.A.**, L.S. Metts, K.R. Thompson, and C.D. Webster. 2008. Total replacement of fish meal with commercial yeast extract (NuPro) and soybean meal in practical organic diets for Nile tilapia *Oreochromis niloticus*. Aquaculture America 2008, Orlando, Fla., February 9-12.
- Trosvik, K.A.**, L.S. Metts, K.R. Thompson, and C.D. Webster. 2008. Total replacement of fish meal with commercial yeast extract (NuPro) and soybean meal in practical organic diets for Nile tilapia (*Oreochromis niloticus*). Alltech's 24th International Animal Health and Nutrition Symposium, Lexington, Ky., April 20-23.
- Webster, C.D. 2008. The aquaculture program at Kentucky State University: Celebrating research, outreach, and teaching at a historically black university. Aquaculture America 2008, Orlando, Fla., February 9-12.
- Wood, D. R., R. S. Neal**, B.M. Boudreau, S.D. Coyle, and J.H. Tidwell. 2007. Performance of Pacific White Shrimp (*Litopenaeus vannamei*) raised in static heterotrophic tank systems exposed to different light sources and intensities. 93rd Annual Kentucky Academy of Science, Louisville, Ky., November 8-10.
- Wood, D. R., R. S. Neal**, B.M. Boudreau, S.D. Coyle, and J.H. Tidwell. 2008. Performance of Pacific white shrimp (*Litopenaeus vannamei*) raised in static heterotrophic tank systems exposed to different light sources and intensities. Aquaculture America 2008, Orlando, Fla., February 9-12.
- Wurts, W. 2008. Polyculture of paddlefish *Polyodon spathula* in ponds used for low-input production of freshwater shrimp. Aquaculture America 2008, Orlando, Fla., February 9-12.
- Wurts, W.A. 2008. Cooperative extension: research and technology vs. reality. Aquaculture America 2008, Orlando, Fla., February 9-12.
- Wynne F.S. 2008. Invited to present the article Live Hauling Food Size Channel Catfish, *Ictalurus punctatus*. Aquaculture America 2008, Orlando, Fla., February 10, 24 attended.
- Bright, L.A. 2008. Economics of largemouth bass production. Ohio Largemouth Bass Workshop, jointly presented by The Ohio State University and Kentucky State University. Wooster, Ohio., April 19.

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EXTENSION/LAY PRESENTATIONS

- Coyle, S.D. 2007. Hatchery/Nursery Production in Largemouth Bass. Culture of Largemouth Bass on Feed Workshop, Kentucky State University, Aquaculture Research Center, Frankfort, Ky., October 19.
- Coyle, S.D. 2007. Feed Training in Largemouth Bass. Culture of Largemouth Bass on Feed Workshop, Kentucky State University, Aquaculture Research Center, Frankfort, Ky., October 19.
- Coyle, S.D. 2007. First Year Growth and Overwintering Largemouth Bass. Culture of Largemouth Bass on Feed Workshop, Kentucky State University, Aquaculture Research Center, Frankfort, Ky., October 19.
- Coyle, S.D. 2007. Tilapia Production. Culture of Largemouth Bass on Feed Workshop, Kentucky State University, Aquaculture Research Center, Frankfort, Ky., October 19.
- Coyle, S.D. 2007. Feed Training Predatory Fish. Ohio Aquaculture Association, Columbus, Ohio, December 7-8.
- Coyle, S. D. 2008. Methods of reproduction. Ohio Largemouth Bass Workshop, jointly presented by The Ohio State University and Kentucky State University. Wooster, Ohio, April 19.
- Coyle, S. D. 2008. Bass during the nursery phase. Ohio Largemouth Bass Workshop, jointly presented by The Ohio State University and Kentucky State University. Wooster, Ohio, April 19.
- Coyle, S. D. 2008. Feed training procedures. Ohio Largemouth Bass Workshop, jointly presented by The Ohio State U. and Kentucky State University. Wooster, Ohio, April 19.
- Coyle, S. D. 2008. Phase II growth and overwintering. Ohio Largemouth Bass Workshop, jointly presented by The Ohio State University and Kentucky State University. Wooster, Ohio, April 19.
- Dasgupta, S. 2007. Small Enterprise Livestock Budgets. 2007 Small Farm Field Day, Kentucky State University, Frankfort, Ky.
- Durborow, R.M. 2007. Field day pond management presentation. Bourbon County; Glenn Mackie, County Ag Agent. September 18.
- Durborow, R.M. 2007. Pond management workshop. Ag and Natural Resources, Mason County, October, 10.
- Durborow, R.M. 2007. Seminar at University of Kentucky College of Agriculture on vision for the U.K. Assistant Director for Ag and Natural Resources, October 15.
- Durborow, R.M. 2008. Field Day pond management presentation in Spencer County. 15 participants. September 8.
- Durborow, R, W.A. Wurts and F.S. Wynne 2008. Presented an aquatic plant/algae control and pond management program for commercial pesticide applicators at the Graves County Extension Office on January 24, five attended.
- Durborow, R, W.A. Wurts and F.S. Wynne 2008. Aquatic plant/algae control and pond management program for commercial pesticide applicators at Kentucky State University Aquaculture Research Center on March 4, six attended.

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EXTENSION/LAY PRESENTATIONS (Cont)

- Durborow, R, W.A. Wurts and F.S. Wynne 2008. Aquatic plant/algae control and pond management program for commercial pesticide applicators University of Kentucky Research and Education Center in Princeton on March 20, eight attended.
- Gomelsky, B., 2007. KSU Farm Field Day, Production of Koi, September 2007.
- Gomelsky, B., 2007. Kentucky Aquaculture Association, Koi, October 2007.
- Tidwell, J. H. 2008. Second year grow-out procedures. Ohio Largemouth Bass Workshop, jointly presented by The Ohio State University and Kentucky State University. Wooster, Ohio, April 19.
- Tidwell, J. H. 2008. Feeds and feeding of feed-trained largemouth. Ohio Largemouth Bass Workshop, jointly presented by The Ohio State University and Kentucky State University. Wooster, Ohio, April 19.
- Tidwell, J. H. 2008. Harvest and marketing. Ohio Largemouth Bass Workshop, jointly presented by The Ohio State University and Kentucky State University. Wooster, Ohio, April 19.
- Tidwell, J.H. 2007. Made an invited presentation entitled "Aquaculture Industry Update: Challenges and Opportunities" to the Kentucky Farm Bureau's Emerging Agriculture Enterprises Advisory Committee Meeting, October 4.
- Tidwell, J.H. 2007. Second-Year Growout of Largemouth Bass. Culture of Largemouth Bass on Feed Workshop, Kentucky State University, Aquaculture Research Center, Frankfort, Ky., October 19.
- Tidwell, J.H. 2007. Feeds and Feeding of Largemouth Bass. Culture of Largemouth Bass on Feed Workshop, Kentucky State University, Aquaculture Research Center, Frankfort, Ky., October 19.
- Tidwell, J.H. 2007. Progress in Genetic Research. U.S. Freshwater Prawn and Shrimp Growers Association, 6th Annual Meeting, Nashville, Tenn., December 7-8.
- Tidwell, J.H. 2007. Polyculture of Tilapia and Freshwater Prawn. U.S. Freshwater Prawn and Shrimp Growers Association, 6th Annual Meeting, Nashville, Tenn., December 7-8.
- Tidwell, J.H. 2007. Emerging aquaculture enterprises. Kentucky Farm Bureau Advisory Committee, Louisville, Ky., October 4.
- Wurts, W.A. 2007. Freshwater Shrimp Farming: Pitfalls and Opportunities. Presentation at the annual fall meeting of Indiana Aquaculture Association, Floyds Knob, Ind., August 18.
- Wurts, W.A. 2007. Small-Scale Aquaculture and Low Input Shrimp. Presentation at the bi-annual KSU Small Farms Field Day, Frankfort, Ky., September 20.
- Wurts, W.A. 2007. Low-Input Shrimp Farming in Kentucky. Annual meeting of the Kentucky Aquaculture Association, Frankfort, Ky., October 19.
- Wurts, W.A. 2008. Copper sulfate, alkalinity and Liming. In-service training for commercial herbicide applicators and County Extension Agents, Mayfield, Ky., January 24.
- Wynne, F.S. 2007. Borrow pit pond test seining demonstration to determine the status of sport fish populations in two ponds near Calvert City, September 17, 10 attended.

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EXTENSION/LAY PRESENTATIONS (Cont)

- Wurts, W.A. 2008. Copper sulfate, alkalinity and Liming. In-service training for commercial herbicide applicators and County Extension Agents, Frankfort, Ky., March 4.
- Wurts, W.A. 2008. Copper sulfate, alkalinity and Liming. In-service training for commercial herbicide applicators and County Extension Agents, Princeton, Ky., March 20.
- Wynne, F.S. 2007. Presented aquatic plant control management options and answered questions to the Deer Lake Home owners association, near Sadieville, Ky. on July 28, 30 attended.
- Wynne, F. S. 2007. Cage culture of Fish. Presented to the Indiana Aquaculture Association at the Extension office and attended a related aquaculture facility tour near New Albany, Ind, August 18, 25 attended..
- Wynne, F.S. 2007. Borrow pit pond test seining demonstration to determine the status of sport fish populations in two ponds near Calvert City, September 17, 10 attended.
- Wynne, F.S. 2007. Pond Management presentation with Bob Durborow during the Third Thursday field day at the KSU Farm on September 20, 22 attended.
- Wynne, F.S. 2007. Kentucky catfish production update. Kentucky Aquaculture Association annual meeting, Kentucky State University Aquaculture Research Center. October 19, 25 attended.
- Wynne, F.S. 2007. Conducted a video-linked Commercial Applicators Aquatic Pesticide In-service training program at the Kentucky State University Aquaculture Research Center with Bob Durborow, December 13, 10 attended.
- Wynne, F.S. 2007. Kentucky Department of Agriculture Feed Loss Grant Program and Live Hauling and Marketing Catfish to Kentucky Fee Fishing Operations. Conducted with Angela Caporelli, KDA Aquaculture Marketing Specialist, at the Graves County Extension Office, December 18, 7 attended.
- Wynne, F.S. 2008. Presented an aquaculture display during the western Kentucky Tobacco Exposition at The Murray State University Curris Center on January 3, approximately 200 attended.
- Wynne, F.S. 2008. Presented a recreational pond management program during the Indiana Aquaculture Association's annual meeting at the Marion County Extension Office, Indianapolis, Ind., March 8, 18 attended.

SERVICE TO THE PROFESSION AND UNIVERSITY

- Bean, W. 2007. Continue to serve as faculty advisor to Aquabreds, the aquaculture graduate student club.
- Bean, W. 2008. FFA Bluegrass Region Judge for Aquaculture Impromptu Meeting at UK Agriculture Building.
- Bright, L.A. 2008. Continues to serve on the Land Grant Program Review Committee.

ANNUAL REPORT 2007-2008

SERVICE TO THE PROFESSION AND UNIVERSITY (Cont)

- Coyle, S.D. 2008. Sent video tapes and printed materials to a family who will pass this information on to their son, who is military personnel in Iraq. Will use this information for "national building."
- Cochran, N. 2008. Assisted KSU Safety Dept. in editing "A Critical Incident: What to do in the First 20 Minutes" video and reformatted it for MPEG 4 and WMV. Captured 60 frames from the video for PowerPoint presentations. Informed producer of the need to acquire permission from original producer and place producer in the credits.
- Cochran, N. 2008. Attended 2008 E-Learning Conference, St. Petersburg, Fla., Feb. 16-19.
- Dasgupta, S. 2008. Guest editor of Aquaculture Economics and Management Journal
- Dasgupta, S. 2008. Served as faculty senator and on the KSU Curriculum Committee
- Gomelsky, B. 2007-2008. WAS Associated Editor in North American Journal of Aquaculture
- Gomelsky, B., 2008. Reviewed seven scientific articles for different journals
- Gomelsky, B., 2008. Served as Chair of Session "Biotech Application" at Conference Aquaculture America 2008, Orlando, Fla., February 2008.
- Johnson, K.H. 2007-2008. Serving on the Strategic Planning Task Force Committee.
- Johnson, K.H. 2007-2008. Serving as Records Management Liaison for the Division of Aquaculture.
- Metts, L. 2008. Served as judge for Aquaculture section of the Bluegrass Region Future Farmers of America (FFA) Day, University of Kentucky, Lexington, Ky., March 12.
- Mims, S.D. 2007. Member of Tenure and Promotion Task Force.
- Mims, S.D. 2007. Kentucky Technical Adviser for SRAC.
- Mims, S.D. 2007. Member of the Professional Concerns Committee (non-senator)
- Mims, S.D. 2007. Member of USAS subcommittee for student chapters.
- Porter, T. 2007. Continued to meet with the campus podcasting team.
- Porter, T. 2007. Served on KSU Education Dept.'s search committee for a Technology Coordinator position, and referred a candidate.
- Porter, T. 2007. Reviewed high definition equipment at the Media Expo 2007, Columbus, Ohio.
- Porter, T. 2008. Participated in the Internet II Conference from U. of Pennsylvania at ASB
- Stilwell, W.E. 2007. Served on the Kentucky State University Environmental Education Center Steering Committee.
- Stilwell, W.E. 2007. Served on the Kentucky Association of Environmental Educators.
- Stilwell, W.E. 2008. Attended the Earthforce Conference in Bowling Green Kentucky.
- Tidwell, J.H. 2007. Interviewed as a subject expert concerning Freshwater Prawn harvest in Kentucky for Kentucky Public Radio and for Kentucky Enquirer newspaper.
- Tidwell, J.H. 2007. Continues to serve on the university's Strategic Planning Committee.
- Tidwell, J.H. 2007. Presentation on Freshwater Prawn farming in Kentucky at an open forum at the Kentucky Folklife Festival.
- Tidwell, J.H. and Bright, L.A. 2007. Cooked Freshwater Prawn for a general audience at the Kentucky Folklife Festival.

KSU AQUACULTURE RESEARCH CENTER

SERVICE TO THE PROFESSION AND UNIVERSITY (Cont)

- Tidwell, J.H. 2007. Continues to serve on the university's Biohazard Committee.
- Tidwell, J.H. 2007. Continues to serve on the university's Institutional Research Committee.
- Tidwell, J.H. 2007. Continues to serve on the Deans and Chairs Committee.
- Tidwell, J.H. 2007. Continues to serve on the Graduate Council.
- Tidwell, J.H. 2007. Serves as Co-chair of Environmental Education Center Steering Committee.
- Tidwell, J.H. 2007. Served on the search committee for Chair of Computer Sciences.
- Tidwell, J.H. and Coyle, S.D. 2007. Prepared and hosted a workshop, "Production of Largemouth Bass on Feed," at the ARC for 35 registered participants. The Kentucky Aquaculture Association annual meeting was held immediately following the workshop, October 19.
- Webster, C.D. Kentucky State University Health Insurance Advisory Committee, 2002-present
- Webster, C.D. U.S. Aquaculture Society Faculty Liaison, 2000-Present.
- Webster, C.D. Serves on the Kentucky State University Impact Writing Team to assist, prepare, write, and submit Impact Statements from the KSU-LGP to the U.S. Congress, and the Kentucky Legislature.
- Webster, C.D. Associate Graduate Faculty, Department of Animal Sciences, and University of Kentucky.
- Webster, C.D. Affiliate Professor, Department of Fisheries and Allied Aquacultures, Auburn University.
- Webster, C.D. Editor of the Journal of the World Aquaculture Society.
- Weibel, C.R. 2007. Assisted with the new trails map at the EEC
- Weibel, C.R. 2007. Took responsibility and control of the automated gate scheduling software and installed it on a PC networked only to the gate to prevent networking issues.
- Weibel, C.R. 2007. Assisted with photos for the football and basketball programs.
- Weibel, C.R. 2008. Served on the KSU Commencement Committee.
- Weibel, C.R. 2008. Assisted with printing graphics for the Gala 2008.
- Weibel, C.R. 2008. Internet II conference from U. of Pennsylvania at ASB conference center.
- Wurts, W. 2007. Coordinated technical session (invited), Freshwater Fish Culture, for *Aquaculture 2008* the National Conference and Exposition of the US Aquaculture Society, the National Aquaculture Association and the USASA to be held in Orlando, Fla.
- Wurts, W. 2007. Conducted radio interview for the *Jack Crowner Show*, "Can I Make Money in Aquaculture?"
- Wynne, F. 2007. Made a site visit to the Marshall County Extension office to identify and offer control suggestions regarding aquatic plant growth that was growing in a local waste water treatment system, August 28.
- Wynne, F. 2007. Hosted a PAAC board member meeting to discuss the upcoming auction of the fish processing plant and equipment, six attended, October 4.
- Wynne, F. 2007. Attended the PAAC fish processing plant and equipment auction, October 27.
- Wynne, F. 2007. Presented a western Kentucky aquaculture extension program update and participated in the external KSU Aquaculture review program, November 15.

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SERVICE TO THE PROFESSION AND UNIVERSITY (Cont)

- Wynne, F.S. 2007. Manned an aquaculture display booth with Drs. Wurts and Durborow during the Princeton Field Day on July 26. Two thousand persons estimated attendance.
- Wynne, F. 2008. Evaluated three student presentations during the World Aquaculture Society Aquaculture America conference in Orlando Florida February 9-12.
- Wynne, F. 2008. Chaired a portion of the Freshwater Finfish Section during the World Aquaculture Society's U.S. Chapter's Aquaculture America Conference, Coronado Springs Resort, Orlando, Fla., February 11.
- Wynne, F. 2008. Completed the Kentucky Department of Agriculture's Division of Environmental Services exam for commercial applicators aquatic pesticides (section #5), February 19.
- Wynne, F. 2008. As a member of the technical committee, reviewed a Southern Regional Aquaculture Center fish nutrition proposal, February 21.
- Wynne, F. 2008. Development committee member for the formation of the Aquaculture Extension Specialist's subchapter of the United States Aquaculture Association chapter of the World Aquaculture Society.
- Yancey, D.H. 2008. Coordinated with Irma Johnson from KSU to prepare classroom building for "Green Day" festivities at KSU. This included getting students from Capital Day school cleaned-up from earlier tour at the EEC (mud, etc.) in preparation for lunch inside the classroom building. Assisted William Bean as well in constructing mini eco-systems using coke bottles and sand. Each system was then stocked with ghost shrimp and plants.



Kentucky State University's central campus

KSU AQUACULTURE RESEARCH CENTER

TOURS AND PROMOTIONAL ACTIVITIES

- Bean, W. 2007. ARC Tour w/ Atherton, Valley, and Western H.S. classes
- Bean, W. 2007. Judged Aquaculture Impromptu at Bluegrass Region FFA Day, seven counties represented (up from the five counties last year)
- Bean, W. 2007. Participated in Ky. Folklife Festival, Frankfort, Ky., with Mobile Classroom (30,000 people attended in three days; estimated 15,000 students).
- Bean, W. 2007. Participated in CCU Youth Festival, Frankfort, Ky., with Mobile Classroom (estimated 3,300 kids).
- Bean, W. 2007. Participated in Grow it, Wear it, Eat it Showcase, Alexandria, Ky. (1200 students)
- Bean, W. 2007. Classroom presentation at Franklin Co. H.S. for Advanced Biology class (Ms. Morgan): Day 1 - Body Systems of Fish, Day 2 - Body Systems of Shellfish, Day 3 - Tour of ARC.
- Bean, W. 2007. Laboratory presentation at ARC for Western Hills High Horticulture class (Mrs. Thomas): Cellular Biology lab observing onion root and cheek (epithelial) cells.
- Bean, W. 2007. Conducted seven ARC tours including; Don Offutt (KSU School of Ed) & four landowners from Ky., Ohio, Alaska, and Nigeria; 15 FFA students from Iowa; four summer groups.
- Bean, W. 2007. Assisted Dr. Durborow and Dr. Cooper (UK) with an ARC tour for high school students participating in crayfish experiment.
- Bean, W. 2007. Mobile Classroom at Muhlenberg Co. Ag Day (Tommy Harrison)
- Bean, W. 2007. Wolfe Co. H.S. (Cynthia Gullett) and UK's Dr. Cooper.
- Bean, W. 2007. Woodford Co. H.S. (Mary Beth Rouse) and UK's Dr. Cooper.
- Bean, W. 2007. Western Dubuque H.S. FFA, Iowa (Matt Lansing).
- Bean, W. 2007. KSU Dr. Barney and Land Grant guests.
- Bean, W. 2008. Frankfort High School Tour of ARC (Joanne Newberry) +10 students
- Bean, W. 2008. Mercer County High School Tour ARC (Allen Godbey) +20 students; provided and cooked tilapia lunch
- Bean, W. 2008. Assisted UK undergrad students Tour of ARC (Dr. Webster, Ken Thompson, and Linda Metts) +six students
- Bean, W. 2008. Grant County High School (Richard Gator): +84 students, Classroom Presentation "Importance of Aquaculture to Kentucky"; discussed the parts and functions of their RAS components (model Mini Fish Farm)
- Bean, W. 2008. Owen County High School (Garrick Howell): +82 students (total from multiple visits) Classroom Presentation "Basics of Aquaculture," illustrating the need for aquaculture and the sections it includes. Classroom presentation "Tilapia Culture" illustrating the basic culture requirements for RAS culture of tilapia.
- Bean, W. 2008. Peaks Mills Elementary School (Pat White): +210 students, Career Day Presentation "Being an Aquaculturist," illustrating the need for strong STEM backgrounds and possible careers in aquaculture field. Live animals were used.
- Bean, W. 2008. Crittenden County Elementary (Tammy Brantley) w/ Mobile Classroom: +317 students, Presentation "Meeting the Crops," illustrating biological differences

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TOURS AND PROMOTIONAL ACTIVITIES (Cont)

between vertebrate (fish) and invertebrate (crustaceans and mollusks) animals. Live animals were used.

- Bean, W. 2008. Franklin County High School (Ann Morgan): +35 students, classroom presentation "Cell Biology," illustrating the differences in organelles present in plant and animal cells; protein synthesis; the roles of DNA and RNA in transcription and translation.
- Bean, W. 2008. Western Hills High School (JR Zinner): +150 students (total from multiple visits), Mr. Zinner and his Aquaculture and Animal Science classes have invested considerable money and effort into RAS production of aquacrops. Much of my time spent at the school involves informal teaching methods due to the practical nature of the task. These students are directly involved with production methods and require varying levels of information.
- Bean, W. 2008. HBCU Showcase w/ Mobile Classroom in Louisville, Ky. at the Kentucky International Convention Center: +2000 students.
- Bean, W. 2008. Spring Open House w/ Mobile Classroom: 500 students
- Bean, W. 2008. 4-H Youth Fair w/ UK Extension agent (Scott Darst) w/ Mobile Classroom: +40 students (low turn-out probably due to coinciding spring break) Presentation "Meeting the Crops," illustrating biological differences between vertebrate (fish) and invertebrate (crustaceans and mollusks) animals. Live animals were used.
- Durborow, R.M. 2007. Hosted a tour of KSU aquaculture facilities for Dr. Robin Cooper, University of Kentucky biology professor, his Ph.D. graduate student, Woodford County H.S. teachers and about 60 Woodford County H.S. students.
- Stilwell, W.E. 2007. Assisted with Dr. Javed's summer environmental science workshop July 9-10 (110 contacts).
- Stilwell, W.E. 2007. Blackberry class with Henry County students and teachers July 13 at the EEC (10 contacts).
- Stilwell, W.E. 2007. Governors Scholars Minority Program July 24 at the EEC (40 contacts).
- Stilwell, W.E. 2007. REAP students fishing and hiking July 27, (20 contacts).
- Stilwell, W.E. 2007. Took Summer Transportation Institute kids on hike throughout the EEC July 27, (25 contacts).
- Stilwell, W.E. 2007. Participated in Ky. Folklife Festival September 20-22, (6,000 contacts).
- Stilwell, W.E. 2007. Whitney Young Honor students July 27 toured the EEC (60 contacts).
- Stilwell, W.E. 2007. Second St. School of Frankfort Independent School System visited the EEC on September 28, (95 contacts, one visually impaired girl).
- Stilwell, W.E. 2007. Assisted with Dr. Sluss with her biology class October 5 at the EEC (30 contacts)
- Stilwell, W.E. 2007. Mercer County Gifted and Talented Science Program, October 18 at the EEC (40 contacts).
- Stilwell, W.E. 2007. Dr. Sluss' Aquatic Ecology class at the EEC October 24, (10 contacts) and October 31 (10 contacts).

KSU AQUACULTURE RESEARCH CENTER

TOURS AND PROMOTIONAL ACTIVITIES (Cont)

- Stilwell, W.E. 2007. Georgetown Middle School November 8, (45 contacts).
- Stilwell, W.E. 2007. Saint Leo's Science fair extravaganza with the Mobile EEC November 15, (175 contacts).
- Stilwell, W.E. 2008. La Gardiene garden club butterflies and Kentucky's forests (60 contacts) 01/15/08.
- Stilwell, W.E. 2008. Mobile EEC to Highland Middle School sixth and seventh graders (60 contacts) 01/23/08.
- Stilwell, W.E. 2008. Mobile EEC to Highland Middle School sixth and seventh graders (42 contacts) 02/01/08.
- Stilwell, W.E. 2008. Met with Teresa Caldwell, disabilities expert from the state, to evaluate the Mobile EEC. Received complimentary letter regarding her visit.
- Stilwell, W.E. 2008. Animal Tracks class February 23 (15 contacts).
- Stilwell, W.E. 2008. Green Day with Capital Day School at the EEC (70 contacts), 01/15/08
- Stilwell, W.E. 2008. Anderson County Girl Scouts, nature hike at the EEC (100 contacts), 04/26/08.
- Stilwell, W.E. 2008. Anderson County Girl Scouts, nature hike at the EEC, and fill-in patch completion requirement work (130 contacts), 04/27/08.
- Stilwell, W.E. 2008. Mobile EEC to the JM Feltner 4-H Camp for an on site nature hike (250 contacts), 05/15/08.
- Stilwell, W.E. 2008. La Jardineire garden club to the EEC for a short hike and to conduct monthly meeting at the EEC 05/20/08, (40 contacts).
- Stilwell, W.E. 2008. PACT students to the EEC for summer program (50 contacts), 06/09/08.
- Stilwell, W.E. 2008. PACT students to the EEC for summer program (50 contacts), 06/10/08.
- Stilwell, W.E. 2008. Area Health Education Centers (AHEC) Louisville area (50 contacts), 06/11/08.
- Stilwell, W.E. 2008. Louis Stokes Alliance for Minority Persons to the EEC for several visits for the summer programming (100 contacts), 06/16/08 – 06/30/08.
- Thompson, K. and Metts, L. 2008. Gave tour of ARC and Aquaculture Nutrition Lab to food science class (FSC304) from University of Kentucky, April 15.
- Tidwell, J.H. and Coyle, S.D. 2007. Conducted a tour and arranged lunch at the ARC for Ky. Extension Specialists. There were 25 people in attendance.
- Weibel, C. and Porter, T.P. 2008. Conducted a tour of Aquaculture's technology, particularly iPod related activities, for Mr. Sias.
- Weibel, C. R. 2007. Photo published in Global Aquaculture Advocate, July/Aug., Vol 10, #4
- Weibel, C.R. 2007. Designed five 48"X36" images with text and audio for EEC kiosks.

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INFORMATION TECHNOLOGY

- Bean, W. 2007. Converted three sections of the TAFE file "Biology of Native Freshwater Fish" for Web-access (pdf file)
- Bean, W. 2007. Addition to KSU AquaEd Web site under the Fish ID Section "Native Fishes of Kentucky Photo Section" includes 50+ pics of fishes classified by common family name.
- Cochran, N. 2007. Taped, edited and formatted new online course *Basics of Fish Diseases*.
- Cochran, N. 2007. Introduced *Principles of Aquaculture* and *Basics of Fish Diseases* on iTunes University.
- Porter, T. 2008. Supervised the upgrading of edit suite to handle high definition video.
- Porter, T. 2008. Edited video for presentation at KSU reception for Ky. legislators.
- Porter, T. and C.R. Weibel. 2007. Completed production and burned DVDs of "Cleaning Water – Growing Fish," an eight-minute video that demonstrates how old wastewater tanks can be used for growing fish.
- Porter, T. and C.R. Weibel. 2007. Developed a new 100-page plus Aquaculture Web site using Adobe's Dreamweaver is now in operation. Full-length aquaculture videos are available on the new site, as well as a search engine and Google map.
- Porter, T. and C.R. Weibel. 2007. Designed and produced Folklife Festival Schedule-of-Events posters for the EEC and K-12 venues
- Porter, T. and C.R. Weibel. 2007. Took head shots of faculty, staff and students and placed on KSU Aquaculture Web site.
- Porter, T. and C.R. Weibel. 2007. Burned and distributed *The Aquaculture Experience* DVDs.
- Stilwell, W.E. 2007. Updated and improved www.ksuenvironmental.org (almost 7,880 visitors to date from 51 countries).
- Stilwell, W.E. 2007. All new html pages on the EEC Web site have been evaluated in accordance with Section 508 of the Rehabilitation Act Amendments to the Workforce Investment Act of 1998 and according to the CAST guidelines; the entire site is accessible to persons with visual handicaps.
- Weibel, C.R. 2007. Assisted students with designing and printing three posters for the Kentucky Academy of Science.
- Weibel, C.R. 2008. Attended large-format printer conferene in Indianapolis, Ind.
- Wurts, W. 2008. Worked with several county agents to develop simple protocols for using digital photos via e-mail for aquatic weed identification. The objective is to improve speed and efficiency of service to agents and farmers and broaden effective service area.
- Wurts, W. 2008. Updated content and links, and collected data for Aquaculture Information Web site.
- Yancey, D.H. 2008. Programed electronic gate in accordance of changing schedules to provide access for KSU nursing students into the facility.

KSU AQUACULTURE RESEARCH CENTER

INTERAGENCY INVOLVEMENT

- Bean, W. 2007. Supporting two teachers that are new to using aquaculture in the classroom: Wes Belt (Lyon Co H.S.), Pamela Ernstberger (The Sand School in New Haven, Conn.)
- Bean, W. 2007. Assisted two high school students from DuPont Manual with Science Project "Toxicity Levels of Freshwater Prawns to Gas, Salt, and Liquid Fertilizer." Research was setup and conducted at ARC.
- Durborow, R.M. 2008. Two farm visits/investigations of leaking ponds with NRCS state geologist, Paul Howell: Mike Berry in Scott County and Vasil Leskiv in Anderson County.
- Durborow, R.M. 2007. Planned KAA Annual Meeting with Kentucky Dept. of Ag.
- Durborow, R.M. 2007. Hosted a tour of KSU aquaculture facilities for Dr. Miriam Kannan, Northern Kentucky University biology professor, and her undergraduate biology major students.
- Durborow, R.M. 2008. Participated in West Virginia University Aquaculture Forum and industry tour on January 18-19.
- Stilwell, W.E. 2007. Completed the Midway College intern project with the intern, Natasha Vandertoll, who received an "A" for her efforts.
- Stilwell, W.E. 2007. Met with staff from the Nature Conservancy to develop a burn plan for the EEC.
- Stilwell, W.E. 2007. Met with representatives from the Department of Fish and Wildlife to discuss and develop education activities including shocking Six Mile Creek.
- Stilwell, W.E. 2007. Met with associates from Carman Landscape Engineering firm to develop a handicapped-accessible trail.
- Stilwell, W.E. 2007. Met with local Boy Scout troop to discuss Eagle Project (12/8/07).
- Stilwell, W.E. 2008. Met with local Boy Scout troop to discuss creek clean-up, Six Mile Creek (04/09/08).
- Stilwell, W.E. 2008. Met Mr. Luis Henrique Daldegan, State Secretary of the Environment, State of Mato Grosso Cuba, to discuss environmental education in Kentucky (05/06/08).
- Stilwell, W.E. 2008. Met with representatives from the Assisted Living of Kentucky at the EEC to discuss potential future day visits (06/05/08).
- Tidwell, J.H. 2007. Serves as a member of the World Aquaculture Society/American Fisheries Society education committee.
- Tidwell, J.H. 2007. Served as an external reviewer for Promotion Application: Associate Professor to Professor at Mississippi State University.
- Tidwell, J.H. 2007. Serves as an external reviewer to Virginia Polytechnic Institute and State University on the Interagency Promotion Committee in reference to Ewan McClaine.
- Tidwell, J.H. 2007. Serves as a representative for the Translational Research Conference Committee which is chaired by President Ramsey and reports to the Council on Postsecondary Education.
- Tidwell, J.H. 2007. Continues to chair a committee to study the feasibility of intensive recirculating saltwater shrimp production under Kentucky conditions for the Governor's Office of Agricultural Policy. Members include representatives of U.K., GOAP, WKU, and Sygen.

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INTERAGENCY INVOLVEMENT (Cont)

- Tidwell, J.H. 2007. Continues to serve on the Governors appointed Aquaculture Task Force.
- Tidwell, J.H. and Benson, H.R. 2007. Serving on the Board of Directors of Kentucky Seafood Company.
- Tidwell, J.H. 2007. Represented KSU at The Second Kentucky Engagement Conference.
- Tidwell, J.H. 2007. Invited as an area expert to be a member of the task force to review agriculture development funds.
- Tidwell, J.H., S.D. Coyle and L.A. Bright. 2008. Conducted a joint workshop with The Ohio State University and their aquaculture extension agent Laura Tiu in Wooster, Ohio. The workshop was on Largemouth Bass Production and nearly 30 local/area farmers attended.
- Tidwell, J.H. 2008. Traveled to El Campo, Tex. for the Texas Aquaculture Association and presented KSU's most recent research on freshwater prawns.
- Weibel, C.R. 2007. Recorded video of striping hybrid stiped bass at the Pfeiffer State hatchery
- Weibel, C.R. 2007. Assisted Wyvette Williams and Public Relations with photos of football and basketball including Senior Day and Homecoming and the concert at the Frankfort Convention Center.
- Weibel, C.R. 2007. Took photos of Miss KSU to be submitted to Ebony Magazine.
- Weibel, C.R. 2007. Assisted Robert Lewis with the Aquaculture portion of the ESPNU video television spot.
- Wurts, W. 2007. Cooperated with UK and KSU Extension colleagues to staff and setup KSU Aquaculture Display at the University of Kentucky College of Agriculture Field Day in Princeton, Ky.
- Wurts, W. 2008. Collaborated with KSU Aquaculture Specialists to conduct In-Service Training for aquatic herbicide applicators and County Extension Agents.
- Wynne, F. 2007. Co-chair of the National Recreational and Farm Pond Team to develop a collaborative national eXtension group for the purposes of developing an online source for recreational pond information. The project proposal was submitted by Dr. Greg Lutz, LSU Aquaculture Extension Specialist. Proposal will be re-submitted for potential funding next year.
- Wynne, F. 2007. With the assistance of Dr. Lee Townsend, UK Entomologist, revised a proposed Aquatic Pesticide Training Program for category 5 commercial pesticide applicators and approved by the Kentucky Dept. of Agriculture.
- Wynne, F. 2007. Participated in the Kentucky Cooperative Impact Evaluation Study of the Agricultural Development Fund Projects hosted in Elizabethtown by the University of Kentucky Agricultural Economics Department, December 20, 15 attended.
- Wynne, F. 2007. Arranged three Aquatic Pesticide Commercial Applicators In-service training programs to be held in Frankfort, Princeton, and Mayfield in January and March of 2008 through the Kentucky Dept. of Agriculture's Division of Environmental Services.
- Mims, S.D. 2007. Member of Curriculum Committee at Frankfort High School.
- Mims, S.D. 2007. Substitute teacher and Homebound teacher for Frankfort High School.

KSU AQUACULTURE RESEARCH CENTER

SERVICE TO THE COMMUNITY

- Mims, S.D. 2007. Treasurer and Volunteer for St. Vincent De Paul Society.
- Porter, T. 2007. Arranged for Christmas calls to military personnel in Iraq through the Freedom Calls foundation.
- Porter, T. 2008. Shot photos of special needs students learning to fish in Jefferson County.
- Stilwell, W.E. 2008. Coached the Hawks, under the age of 10 girls' indoor soccer team.
- Tidwell, J.H. 2007. Serves as the chair on the Frankfort High School Comprehensive School Improvement Plan Committee.
- Weibel, C.R. 2007. Assisted in layout of facilities for the downtown Folklife Festival and shot photos of activities.
- Weibel, C.R. 2008. Mentor to Colby Goodrich and Devyn Nance.
- Weibel, C.R. 2007. Provided photos for the Frankfort Arts Foundation brochure.
- Weibel, C.R. 2007. Took photos of the Franklin County High School ROTC and provided a disk of edited photos.
- Weibel, C.R. 2008. Took photos of the 2008 KSU Commencement at the Frankfort Civic Center.
- Weibel, C.R. 2008. Provided photos for the Frankfort Arts Foundation brochure.
- Weibel, C.R. 2008. Assisted John Sedlacek with burning/formatting video and disc cover for St. Leo's Science Fair.
- Wynne, F. 2007. Assistant baseball coach, Paducah Tilghman High School – fall 2007.
- Wynne, F. 2007-2008. Made nine apheresis platelet donations at the Paducah Red Cross Center.
- Wynne, F. 2008. Volunteer work with the Greater Paducah/ McCracken County Recycling Program's monthly collection of recyclable materials in an effort to establish a municipally funded recycling program.



Frankfort Independent 7th & 8th graders enjoy a day at the Environmental Education Center.