



# WISCONSIN AGRICULTURAL EDUCATION & WORKFORCE DEVELOPMENT COUNCIL

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## *Wisconsin Agricultural Education & Workforce Development Council*

# *2009 Annual Report*

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## Preface

In accordance with the legislative statutes of WI Act 223 (The Wisconsin Agricultural Education and Workforce Development Council), the Council is required to submit a report each September.

Such report is to be annually delivered to: the Legislature, Governor, several specified cabinet secretaries, State Superintendent, President of the UW System, Director of the Wisconsin Technical College System (WTCS), Chancellor of the UW-Extension, and Chancellors of several specified UW institutions.

### *Annual Report Requirements:*

1. A summary of Council's activities in the preceding fiscal year, including an evaluation of the success of the Council's activities using the criteria identified by the Council for evaluating its activities.
2. An assessment of agricultural education programs.
3. A list of current and anticipated challenges related to agricultural education.
4. The Council's recommendations, including any recommendations related to the structure or termination of the Council.
5. Any dissenting opinions of Council members related to the activities and recommendations of the Council.
6. The reviews of agricultural education programs in primary and secondary schools, technical colleges, and the UW System noted above, and the Council's reaction to the reviews.

## **Council Direction**

### ***VISION***

Grow Wisconsin's ability to compete by creating a stronger and sustainable workforce.

### ***MISSION***

Attract, develop and retain the premium workforce required to Grow Wisconsin's agricultural industry, food, and natural resource systems.

### ***OBJECTIVES***

1. Implement the recommendations of the Secretary's Panel on Agricultural Education.
2. Work closely with the "Grow Wisconsin" job creation initiative.
3. Support research related to agricultural employment and educational needs.
4. Mobilize new and innovative agricultural education programs and projects.
5. Recommend policies and initiatives to improve agricultural education and workforce development.
6. Promote recruitment, training and retention of qualified workers.
7. Encourage youth to pursue related careers.
8. Serve as an advocate for agricultural workforce diversity.
9. Advocate for and promote public and private funding for agricultural education and employee development programs.
10. Encourage and facilitate public-private partnerships and coalitions.
11. Promote strong agricultural programs in the state educational systems at all levels.
12. Support recruitment, training and professional development of agricultural educators and leaders.

## Executive Summary

### **The Legislative Act:**

2007 Wisconsin Act 223 created the Agricultural Education and Workforce Development Council (Council) in the Department of Agriculture, Trade, and Consumer Protection (DATCP), from WI Assembly Bill 83. <http://www.legis.state.wi.us/2007/data/AB83hst.html>

### **The Council:**

The Council is focused on the task of impacting Wisconsin's Agricultural Industry and the state's economy through an action plan centered on enhancing the size and talent of the state's available agricultural workforce. Individually and collectively the make up of this 34-person Council (with representatives from private industry, education, Wisconsin Legislature and government agencies) is very impressive with tremendous potential for achieving this mission.

As a newly formed organization, the Council has appropriately required an initial period of time to coordinate its action plan while prioritizing its best use of limited resources. Aside from generating awareness of the Council's mission and conducting successful fundraising, one of the single greatest challenges confronting the Council has been the task of demonstrating measurable need and value to the broad scoped industry of Wisconsin agriculture. As a key stake holder to the Council's mission, private industry is becoming increasingly receptive to the Council's efforts. However, the current economic situation is fostering hesitancy for many stakeholders to openly buy into the Council until further acts of value and success are demonstrated. Buy in from educational institutions has been growing at a steady pace, while business investment and involvement has been somewhat tempered, due to a need for faster and concrete returns by the Council, and the current economic climate.

To date, the Council has held three organizational meetings and hired an Executive Director. The vision, mission, and objectives were revised from the initial drafts created by the original formation committees. Such revisions were vetted by the Council, reviewed by outside experts, and refined. In essence, the Council is earnestly striving to narrow its focus and broaden its stakeholder appeal. Such action is proving to be especially critical in demonstrating how the Council is in complimentary support of, but distinguishably different from such organizations as the WI FFA Foundation and the WI FFA Alumni. A complete Vision, Mission and Objectives can be found in this report.

### **Neighboring States:**

As confirmed in discussions with other states with similar programs, the complexity of large council relationships is daunting and can take time to coordinate. It is incumbent on the Council and Executive Committee, with input from key constituents, especially private industry, to establish ranked priorities. Further clear expectations with measurable objectives and action plans are critical. States such as Minnesota and Illinois indicate that success of their respective programs is heavily impacted by the availability of state supported budgets for operational costs.

### **Memorandum of Understanding:**

The Council is financially supported primarily through charitable contributions from private industry and individuals. These types of contributions made in support of the Council mission are administered through the Wisconsin Agricultural Education Foundation (WAEF), a separate 501 (c) (3) organization. The WAEF also raises and administers funds for other efforts that promote and sustain agricultural education. The WAEF provides quarterly payments to the Department of Agriculture, Trade, and Consumer Protection for most Council expenses as prescribed in a memorandum of understanding between the agency and WAEF. The Council is legislatively expected to be financially self-sufficient without the aid of state tax-based funding.

**Fundraising:**

WAEWDC, as a quasi-governmental body, is prohibited from directly soliciting funds to support the operation of the Council. The Council has established an operating budget and is responsible for managing that budget. A Fundraising Committee, led primarily by private industry representatives serving on the Council and others interested in the Mission of the WAEWDC, has been organized in a professional manner through the mobilization of a grassroots network. The Committee is coordinating its efforts through the WAEF. A consultant was hired to assist the committee organize the efforts and to develop campaign materials. The initial campaign targeted medium sized gifts of (\$10,000 - \$25,000 over four years) from corporations, foundations, and individuals. The campaign was launched and due to the economic downturn results were extremely poor. The fundraising strategy has been restructured and efforts are well underway to organize a grass roots team, primarily made up of retired agricultural instructors located in all regions of the state, to help carryout the first phase. Council members, (mostly private industry), have increased their participation to create solicitation appointments for the Fundraising Committee with support from the Executive Director.

Some Council expenses have been and continue to be paid directly by private industry and individuals. These types of expenses include meetings, organization expenses, and meals for Council meetings. Companies have also provided in-kind support such as printing and related operating expenses. DATCP has also provided support by administering employment of the Executive Director and office space for the Council.

The current economic situation has put a strain on the fund-raising effort from the agricultural industry. However, despite this challenge, the WAEWDC has had some success in generating the necessary operational funds for its first year of work. Legislators have expressed an understanding of the importance of the agricultural industry to the economic health and recovery of Wisconsin. With that in mind, the industry has shown dedicated support of time, talent, product, and treasury to get the WAEWDC up and running.

**Belief:**

It is the general belief of this Council that Wisconsin's economy is not operating at full capacity or efficiency and that there is an incredible need for advice and counsel to state agencies, educational institutions, and the Wisconsin Legislature on matters related to agricultural education and workforce development. The Council is well poised to champion such services over time.

**Actions:**

Aside from numerous smaller tasks, the Council is actively engaged in two larger projects. One is aimed at offering a web-based portal for Wisconsin businesses and post secondary learning institutions to post employment opportunities and career center resources on one centralized portal specific to agriculture. The goal of this project is to facilitate an immediate link between potential employers and job seekers, including non-traditional agricultural job seekers. The other project is a web-based project aimed at capitalizing on social networking and social media, (i.e. Facebook, YouTube, etc) to link youth, parents and high school guidance counselors to "Career Pathway" resources representative of the agricultural private industry in Wisconsin.

**Future Needs:**

The Council believes it is now time for the State of Wisconsin to make the future of Wisconsin's agriculture and its workforce a priority and support the Council's vital activities and mission by passing legislation to fully fund the Council and its mission. Such support will enhance the Council's role in collaborating and supporting many of it's educationally based stakeholders who often solicit financial support from mirrored prospect lists within the state.

# Agricultural & Natural Resource Education in Wisconsin – Summary

## PK-12 Public Schools

Agriculture education continues to prepare students for careers in the agriculture industry, while developing student's leadership skills through FFA and their Supervised Agriculture Experience (SAE). Today's agriculture education departments have developed a comprehensive structure that includes areas such as biotechnology, veterinary science, alternative energy, food science, horticulture and landscaping. With such variety, students are being prepared for the 21<sup>st</sup> Century. The question is: are there enough students learning about agriculture education to meet the needs of the industry?

### Program Status:

- 46,000 students on average per year take agriculture education courses. This amounts to 6% of the total population of career and technical education courses
- over 17,600 agriculture education students are also members of the Wisconsin Association of FFA
- over 4,000 FFA members competed in career development events ranging from agriculture mechanics to environmental and natural resources
- implemented an agriculture/science equivalent credit process to award science credit for agriculture courses
- over 160 agriculture education departments use the Center for Agricultural and Environmental Research and Training (CAERT) a lesson library, online textbook and assessment program which is aligned to the Wisconsin Model Academic Standards. This program is similar to Project Lead the Way (PLTW), in providing rigorous and relevant teaching materials in agriculture education
- implementation of Career Clusters in Agriculture, Food and Natural Resources as well as Science, Technology, Engineering and Mathematics (STEM)

### Challenges:

- there are only 250 agriculture education programs out of the 426 school districts
- few urban school districts have an agriculture education program
- sustaining rural agriculture education programs during periods of declining Pk-12 enrollments
- only 29 out of the 425 school districts have approved agriculture/science equivalency credit
- false impression that agriculture education is not a rigorous agriscience course offering
- lack of quality facilities for a agriculture education program to meet the STEM needs

## **Agriculture Education in the Wisconsin Technical College System**

The Wisconsin Technical College System (WTCS) provides the state with the critical, essential technical occupations we all rely on. There are currently agriculture and natural resource programs at 14 of 16 colleges. The WTCS utilizes a graduate follow-up survey six months after graduation to determine graduate success in finding employment and median starting salary. Also included in this summary are some challenges that the WTCS sees related to agriculture programming.

### **Program Status:**

- 16 associate of applied science degrees
- 6 one-year technical diplomas
- 1 two-year technical diploma
- 2 short-term technical diplomas

### **2008 Graduate Survey Results:**

- 94% of the graduates in agriculture and natural resource programs are employed within 6 months of graduation
- 90% employed within their field of study
- \$28,598 median starting salary

### **Challenges:**

#### Financial

- Lack of resources to add staff or programming
- Operational costs in Farm Business Production Management
  - One-on-one time for instructor and student farmer
  - Mileage for the instructor

#### Agriculture Industry Image

- The inherent uncertainty and risk of farm businesses
- Overall negative impression of agriculture related careers
- Farm families not encouraging sons or daughters to enter agriculture related careers
- Lower wages and longer work hours than other competing career options

#### Student Demographics

- Lower number of high school graduates
- Smaller number of students growing up on farms
- Competition from other career paths
- Fewer new producers (FBPM) Farm Business Production Management program.
- Lack of career awareness for students & their families
- Lack of Career Pathway awareness
- Lack of student diversity

## **Agriculture Education in the University of Wisconsin System**

### **Program Status:**

Over 7,000 students (5,700 undergraduates and 1,300 graduate students) were enrolled in agriculture-related programs at UW-Madison, UW-Platteville, UW-River Falls, and UW-Stevens Point during 2008, representing an average growth in baccalaureate programs of nearly 20% over the last decade.

All agriculture programs in the UW-System are intensely reviewing and revitalizing their curriculum in response to changes in career opportunities in the agriculture industry. Career opportunities are being expanded upon as part of this effort in:

- biofuels, alternative energy and the green movement
- the need to globalize curriculum and attract and retain students with diverse ethnic backgrounds and varying degrees of experience in traditional agriculture
- the necessity to increase enrollments and other revenue generating programs to offset reductions in state funding.

### **Challenges:**

Numerous challenges face the UW-System's undergraduate and graduate programs in agriculture and natural resources.

- the need to provide increased services to a vital and growing agricultural and natural resource sector of Wisconsin's economy with fewer state resources
- continuing to offer top quality education to an ever expanding audience of undergraduate students
- continuing to attract top professionals in the face of budget cuts that have resulted in furloughs
- increased workload and salaries that are not keeping pace with Wisconsin's peer institutions
- increasing the population of students, faculty and staff from various racial, ethnic, and gender backgrounds
- continuing and expanding articulation and collaboration with Wisconsin Technical College System
- Promoting careers in agriculture and natural resource management as an increasing number of Wisconsin's college-age students lack background in these areas.

## **Agriculture Education in the University of Wisconsin Extension – Cooperative Extension**

The University of Wisconsin Extension – Cooperative Extension (UWEX) provides research-based education, technical assistance, and consultation to all of Wisconsin's 72 counties, and increasingly to an audience that spans beyond the state. Cooperative Extension in Wisconsin is divided into four program areas -- Agriculture and Natural Resources; Community, Natural Resource and Economic Development; Family Living; and 4-H Youth Development.

Within the Agriculture and Natural Resources (ANRE) program area, more than 80 Agents and educators serve the state's 72 counties and their citizens. These county-level staff are connected to a network of about 100 faculty and scientists with Extension-funded positions on the campuses of UW-Madison, Platteville and River Falls. County and campus staffs work closely together on educational program delivery as well as the applied research that leads to new knowledge. Although the ANRE program area is not directly engaged in workforce development for K-12 and university students, programs for ag producers, consultants, multiplier groups (like crop consultants, food industry personnel, veterinarians, government agency staff, and others) are often focused on increasing professional skills and encouraging specific changes in management practices, production technology adoption, environmental protection, and other key areas. The ANRE program area is divided into working teams that focus on issues that include: dairy; fruit crops; emerging agricultural markets; grains; farm and risk management; land use and agriculture; food industry research, service and training; livestock; forage; nutrient management; fresh market and commercial vegetable crops; horticulture; and, bioenergy. County and campus Extension staff are also closely involved in teaching within the Farm and Industry Short Course, and they get very involved in 4-H youth activities connected to agriculture.

The Extension 4-H and Youth Development program connects directly with youth in K-12 schools. 4-H is a community of young people across America who are learning leadership, citizenship and life skills. 4-H is about having fun, learning, exploring and discovering. About 50,000 Wisconsin youth are enrolled members of 4-H clubs in Wisconsin. Another 195,000 Wisconsin youth get involved in 4-H through special educational opportunities at school, in after school programs, or at neighborhood or youth centers. One important program focus of 4-H in Wisconsin and nationally is the Science, Engineering and Technology (SET) program. 4-H will address our nation's critical challenge by preparing **1 million new young people** to excel in science, engineering, and technology by 2013. Currently, 4-H Science, Engineering and Technology programs reach more than 5 million youth with hands-on learning experiences to encourage young minds and fill the pipeline of young leaders proficient in science.

## Appendix

### Background Information

The Wisconsin Agricultural Education and Workforce Development Council originated from leaders in the Wisconsin Association of Agricultural Educators (WAAE), launching a campaign in 2001 aimed at helping local teachers remain competitive in the student 'marketplace'. The Public Relations Committee of the association began to evolve a plan to reach out to selected stakeholders within and beyond school district boundaries. As teachers and association leaders quickly learned, together they could expand their influence. They began to realize that their own outreach work really could have far-reaching and positive consequences.

From this premise, former state association president Paul Larson called for WAAE to propose a statewide "Agricultural Education" summit. Mr. Larson is an Agriscience Instructor at Freedom High School, who was then serving as NAAE (National Association of Agricultural Educators) Region III Vice President. The proposal called for the invitation of key stakeholders to help bring life to a vision for agricultural education shared by many and for which he was increasingly called upon to articulate in and outside of the profession. The first information meetings being held in the fall of 2002, resulted in the Statewide Summit on Agricultural Education, being hosted July 23<sup>rd</sup> 2003 at Mauston High School. The summit theme was, "Knowledge Crisis in Agriculture, Food and Natural Resources."

Planners for the Summit involved representatives from the state's Department of Agriculture, Trade and Consumer Protection, the Wisconsin Farm Bureau Federation, the Wisconsin Agribusiness Council, the Wisconsin Department of Public Instruction and the Wisconsin Technical College System. A broadened planning group of about thirty people was convened during a designated "Agriculture Day at the Capitol" the first week of spring included additional numbers of educators, representatives of the State Legislature, the Wisconsin Landscape Federation, and others.

The Summit resulted in the Secretary's Panel on Agriculture Education being convened to recommend actions that offer the greatest potential for assuring the sufficient human resources to "Grow Wisconsin's Agriculture." The panel met three times during 2004, during which time they developed and provided a findings and recommendations report to Wisconsin's Secretary of Agriculture on July 29<sup>th</sup> 2004.

[http://www.datcp.state.wi.us/aboutus/leadership/pdf/Ag\\_Ed\\_Panel\\_Final\\_Report\\_August.pdf](http://www.datcp.state.wi.us/aboutus/leadership/pdf/Ag_Ed_Panel_Final_Report_August.pdf)

The final report of the Panel led to the creation of 2007 WI Assembly Bill 83 and to the passage of 2007 WI Act 223, "The Wisconsin Agricultural Education and Workforce development Council."

<http://www.legis.state.wi.us/2007/data/AB83hst.html>

[http://www.legis.state.wi.us/2007/data/lc\\_act/act223-ab083.pdf](http://www.legis.state.wi.us/2007/data/lc_act/act223-ab083.pdf)

**WISCONSIN LEGISLATIVE COUNCIL**  
**ACT MEMO**  
**2007 Wisconsin Act 223**

**[2007 Assembly Bill 83]**

**Agricultural Education and Workforce Development Council**

2007 Wisconsin Act 223 creates the Agricultural Education and Workforce Development Council (Council) in the Department of Agriculture, Trade, and Consumer Protection (DATCP).

***MEMBERSHIP OF THE AGRICULTURAL EDUCATION AND WORKFORCE DEVELOPMENT COUNCIL***

The membership of the Council consists of: (a) four legislators; (b) the secretaries of ATCP, Workforce Development, Commerce, and Natural Resources; the State Superintendent of Public Instruction (State Superintendent); the president of the University of Wisconsin (UW) System; the chancellor of the UW-Extension; and the director of the Wisconsin Technical College System (WTCS) or their designees as long as a designee is an employee or appointive officer of the person's department or education system who has sufficient authority to deploy department or system resources and directly influence department or educational institution decision making; (c) a member chosen jointly by the deans of several designated colleges; (d) 15 members designated by the Secretary of ATCP representing various businesses and organizations related to agriculture, food, natural resources, renewable energy, and a representative of the ATCP Board; (e) a technical college district director and a technical college dean with authority over agricultural programs—both appointed by the director of the WTCS; and (f) a teacher who teaches classes in science, vocational technology, business, math, or a similar field; a school guidance counselor; a school board member; and a school district administrator—all four appointed by the State Superintendent.

***FUNCTIONS OF THE COUNCIL; ADVISING STATE AGENCIES; REVIEW OF AGRICULTURAL EDUCATION PROGRAMS; AND ANNUAL REPORT***

***Functions of the Council***

1. The Act provides that the Council is directed to seek to do all of the following:
  - Increase the hiring and retention of well-qualified employees in industries related to agriculture, food, and natural resources.
2. Promote the coordination of educational systems to develop, train, and retrain employees for current and future careers related to agriculture, food, and natural resources.
3. Develop support for employment in fields related to agriculture, food, and natural resources.
4. Recommend policies and other changes to improve the efficiency of the development and provision of agricultural education across educational systems. The Council is required to identify criteria for evaluating the success of its activities and then evaluate its activities using those criteria.

This memo provides a brief description of the Act. For more detailed information, consult the text of the law and related legislative documents at the Legislature's Web site at:

<http://www.legis.state.wi.us/>.

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<http://www.legis.state.wi.us/lc>

***Advising State Agencies***

The Council is directed to seek to accomplish the purposes stated above by advising state agencies on matters related to integrating agricultural education and workforce development systems, including all of the following: (a) coordination of programs; (b) exchange of information related to educational and workforce development needs; and (c) monitoring and evaluation of programs.

***Review of Agricultural Education Programs***

The Act requires the Department of Public Instruction (DPI) to annually prepare a review of agricultural education programs in primary and secondary schools. It also requires the WTCS to prepare a review of such programs in technical colleges and requires various entities to prepare a review of such programs in the UW System.

***Annual Report***

The Council is required to submit a report each September to: the Legislature, Governor, several specified cabinet secretaries, State Superintendent, president of the UW System, director of the WTCS, chancellor of the UW-Extension, and chancellors of several specified UW institutions.

The report must include:

1. A summary of Council's activities in the preceding fiscal year, including an evaluation of the success of the Council's activities using the criteria identified by the Council for evaluating its activities.
2. An assessment of agricultural education programs.
3. A list of current and anticipated challenges related to agricultural education.
4. The Council's recommendations, including any recommendations related to the structure or termination of the Council.
5. Any dissenting opinions of Council members related to the activities and recommendations of the Council.
6. The reviews of agricultural education programs in primary and secondary schools, technical colleges, and the UW System noted above, and the Council's reaction to the reviews.

***OPERATION OF THE COUNCIL******Executive Committee and Other Committees***

*Executive Committee.* The Council is required to create an executive committee to provide guidance to the Council and to staff that support the Council's functions. The executive committee must include the Secretary of ATCP or his or her designee and the State Superintendent or his or her designee. Also, state employees must be fewer than half of the members of the executive committee. The executive committee is required to meet between Council meetings.

*Other Committees.* The executive committee may create other committees to assist the Council in its work. The committee members may include members of the Council, employees of the agencies and educational institutions that have members on the Council, representatives of organizations, and others. The executive committee and Council must consider the need for committees on the subjects within the scope of the Council's functions and other subjects determined to be appropriate by the Council and the executive committee. Any committee appointed (other than the executive committee) must annually provide a written summary of its meetings and activities to the executive committee for review and inclusion in the annual report referred to above.

***Executive Director***

The Act increases the position authorization for DATCP by 1.0 full-time equivalent position for executive director of the Council to be funded by program revenue (PR) from the gifts and grants received by DATCP to carry out the activities of the Council.

***Meetings***

The Act provides that the Council must meet at least annually and may meet at other times on the call of at least six Council members or on the call of the executive committee.

***Appropriation***

The Act creates a separate PR appropriation to DATCP from the moneys received as gifts and grants to carry out the activities of the Council.

***No Expense Reimbursement***

The Act specifies that members of the Council may not be reimbursed for their actual and necessary expenses incurred in performing their duties.

***Assistance***

The Act provides that all of the following may assist the Council in performing its functions: DATCP; DPI; the Department of Workforce Development, the Department of Natural Resources, the WTCS; the College of Agricultural and Life Sciences of the UW-Madison; the College of Business, Industry, Life Science, and Agriculture of the UW-Platteville; the College of Agriculture, Food, and Environmental Sciences of the UW River Falls; and the College of Natural Resources of the UW-Stevens Point.

***Effective Date:*** The Act takes effect on April 22, 2008.

***Prepared by:*** Joyce L. Kiel, Senior Staff Attorney April 9, 2008

JLK:wu

# Council Structure

## Executive Committee

Al Herrman (Chair), Pam Jahnke, Paul Larson (Sec), Sam Skemp, Tony Evers, Paul Dietmann, Mark MacPhail (Vice-Chair),

**Executive Director,** Gary Olson

## Education

### Secondary

- State Superintendent of Public Instruction, **Tony Evers**
- WAAE Rep, **Paul Larson**
- Teacher appointed by the State Superintendent who teaches classes in science, vocational tech, business, math or similar field, **David Gliniecki**
- Guidance Counselor appointed by State Superintendent, **Charles Hansen**
- School District Admin appt by the State Superintendent, **Gregory Peyer**
- Member of a School District Board of Education appointed by the State Superintendent, **Richard Austin**

### Post Secondary

- President of the UW system, designee **John Shutske**
- Director of the Tech College, **Dan Clancy**
- Tech College District President, chosen by the Tech College System, **Karen Knox**
- Tech College Dean of Ag, chosen by the Dir of the Tech College System, **William Brendel**
- Chancellor of the U W-Extension, designee **David Williams**
- Member chosen collectively by the Deans of the College of Ag & Life Sciences of UW-Madison; the School of Veterinary Medicine at UW-Madison; the College of Business, Industry, Life Science & Ag of UW-Platteville; the College of Ag, Food, & Envtl. Sciences of UW-River Falls; & the College of Natural Resources of UW-Stevens Point to represent the colleges & school, **Mike Compton**

## Government

### Agency

- Sec of Agriculture, Trade & Consumer Protection, designee **Paul Dietmann**
- Sec of Workforce Dev, designee **Mike Greco**
- Sec of Commerce, designee **Irv Possin**
- Sec of Nat Resources, designee **Carrie Mickelson**

### Legislature

- Senate Education, **John Lehman**
- Assembly Education, **Sondy Pope-Roberts**
- Senate Ag, **Kathleen Vinehout**
- Assembly Ag, **Amy Sue Vruwink**

## Private Industry

- 2 General Ag Reps, **Darlene Arneson and Connie Seefeldt**
- 2 Agribusiness Reps, **Sam Skemp and Doug Wilson**
- Envtl. Stewardship Interest Rep, **Gerry Mich**
- 1 Natural Resources Related Bus Rep, **T.B.D.**
- Plant Ag Business Related Rep, **John Petty**
- Landscaping, Golf Course, Greenhouse, Floral Related Bus Rep, **Bliss Nicholson**
- Food Product & Food Processing Bus Rep, **Mark MacPhail**
- Animal Ag Business Related Rep, **Kathy Muth**
- Renewable Energy Bus Related Rep, **Cal Dalton**
- Ag Communication Interest Rep, **Pam Jahnke**
- 1 Engineering, Mechanical, Electronic & Power Services Relating to Ag Rep, **Al Herrman**
- Board of Ag, Trade & Consumer Protection Rep, **Shelly Mayer**

## Plan of Work

The Wisconsin Agricultural Education and Workforce Development Council will provide advice and counsel to state agencies, educational institutions, and the Wisconsin Legislature on matters related to agricultural education and workforce development. In addition the Council will help attract, develop and retain the superior workforce required to grow Wisconsin's production agriculture, agribusiness, food and natural resource sectors.

The Council will employ a full-time Executive Director who will report to the Executive Committee of the Council. The Executive Director and the Council will:

- Conduct research and provide ongoing evaluations to verify the current and future employment and educational needs of the various industry sectors.
  - *The Rural Labor Survey Report was conducted by Dr. Gary Green of UW-Madison and presented to the Nov 10<sup>th</sup> 2008 Council meeting.*
  - *Agriculture employment multiplier data was collected by Eric Grosso of the WI Department of Workforce Development and presented to the Nov 10<sup>th</sup> 2008 Council Meeting.*
  - *Al Herрман, Jeff Hicken & Gary Olson met with Eric Grosso to request additional information from the agriculture employment multiplier data, which was presented by Jeff Hicken at the Feb 23<sup>rd</sup> 2009 Council meeting.*
  - *Sharon Wilhelm of UW-Madison presented her power point regarding WI Educational Trends data, during the Feb 23<sup>rd</sup> 2009 Council meeting.*
  - *The Gary Olson met with David Williams and John Shutske of UW-Extension to explore Council data needs and availability. This in turn led to a follow-up meeting with Dr. Gary Green.*
    - \* Dr. Green informed us that UW-River Falls, UW-Madison & UW-Platteville Agricultural Colleges currently have him working on an expansion of the first Labor Survey Report. Dr. Green offered to include some needs of the Council into the survey questions going out to employers. The results are expected to be available late this fall.
    - \* The Council is providing input to the development of Dr. Green's second survey.
- Recommend initiatives and policy development that increase the efficiency and effectiveness of agricultural education and workforce development at all levels, including work-site delivery of programs for employees and businesses.
  - *The Council is working with the representatives of World Dairy Expo regarding options to liaison with the Agriculture Instructors in developing additional educational venues conducted annually during the World Dairy Expo.*
  - *The Gary Olson spoke "For Information Only" to the State Assembly's Agricultural Committee during the public hearing regarding Bill 236 "High School Agricultural Science Accreditation."*
    - \* Gary Olson has spoken with Representative Mark Radcliffe who is sponsoring the bill.
    - \* Gary Olson has informally surveyed high school administrators regarding their position on this bill.
  - *The Council is facilitating collaboration between DPI & DWD personnel for efforts relating to assessment and consideration of improvements to Youth Apprenticeship and Youth Coop program offerings.*

- *Gary Olson is working with Pat Schramm and staff members of the South-Western WI Workforce Development Team regarding Agricultural Career Pathway efforts.*

- Identify appropriate funding and mobilize new resources and advocacy for the documented needs of enhanced agricultural education and workforce development programs at the K-12 and higher education levels.
  - *The Council is connecting Council member, Darlene Arneson of Farm Bureau to the DATCP AmeriCorp personnel, for possible collaborated grant pursuits and agricultural education work on nutritional education at the elementary school level.*
  - *The Council is providing written support to Darlene Arneson's grant request for support of Agricultural Education binders relating to Ag InThe Classroom.*
  - *The Council is providing collaborative support to Cyndy Sandberg's WIRED Initiative grant request for support to update and possibly expand Agricultural Youth Apprenticeship offerings through the Department of Workforce Development.*
  - *The Council is collaborating with Farm Bureau regarding possibilities of assisting their promotional needs with the "Ag In The Classroom" program aimed at promoting and supporting educational instruction of agriculture at the elementary and middle school levels.*
- Encourage the recruitment, retention of and ongoing professional development of educators at all levels.
  - *The Council collaborated with private industry/ post-secondary educators/ DATCP & High School Agriculture Instructors to develop and deliver eleven separate workshops at the WAAE PDC in 2009.*
  - *The Council is offering support in soliciting workshop support for the 2010 & 2011 WAAE Professional Development Conferences.*
  - *Information on our Council & Foundation was be made available through a Trade Show vendor booth being shared with DATCP during the 2009 WAAE Professional Development Conference.*
  - *Al Herrman and Gary Olson provided separate and combined presentations during the 2009 WAAE Professional Development Conference.*
  - *The Council is working with educators to develop Educational Tool Kits containing classroom equipment and or materials to be shared by multiple schools.*
    - \* *The concept builds off of the White Tail Tool Kits currently housed through the 12 CESA offices in the state.*
    - \* *Students in of the UW-Madison Vet School are developing Veterinarian Educational Tool Kits.*
    - \* *UW-Stevens Point's College of Natural resources is developing Forestry Educational Tool Kits.*
- Implement the recommendations of the 2003 Agricultural Education Summit and subsequent 2005 Panel on Agricultural Education.
- Support leadership development for citizenship and community needs.
  - *Mar 2009, Gary Olson was the guest speaker for the Rural Electric Initiative's annual meeting hosted in the DATCP Board Room.*

- *In Jan 2009, Gary Olson presented a Leadership keynote address as the kick-off to the WI Farm Bureau's Young Agribusiness Leadership program.*
- *Feb 14<sup>th</sup> 2009, Gary Olson has presented a Leadership keynote address as the kick-off to the WI FFA Alumni Convention in WI Dells.*
- *June 2<sup>nd</sup> 2009, Gary Olson was the guest speaker for the WI Farm Supply Coop Committee meeting in WI Rapids.*
- *June 10<sup>th</sup> 2009 Gary Olson presented a keynote address to secondary school administrators attending the FFA Foundation support event at the FFA State Convention in Madison*
- *Gary Olson collaborated with the DATCP Farm Center/ WTCS/ UW-Extension to develop and conduct a 1/2 day (Outfitting The Toolbox) seminar in Reedsburg and Dodgeville on March 27<sup>th</sup> 2009 as outreach work to production agriculturalists.*
- *The Council is collaborating with the Something Special From WI, Savor WI, Buy Local Buy WI, and AmeriCorps programs of DATCP, to promote greater usage of WI agricultural products through High School Agriculture programs.*
- *The Council worked with the WI State Fair Park's Executive Ag Director and Ag Assistant regarding options to support the "Day Camp." held annually during the WI State Fair*
- *The Council worked with the WI State Fair Park's Executive Ag Director and their summer intern, support the Discovery Barnyard," venue held annually during the WI State Fair.*
- **Conduct fund raising necessary to carry out the mission of the Council by encouraging private industry, foundations, organizations and individuals to support the private/public partnership and initiatives.**
  - *The majority of the fundraising efforts are conducted by a Fundraising Committee and coordinated through the Wisconsin Agricultural Education Foundation.*
    - \* The Foundation has 501 (c) 3 status.
    - \* The Foundation also offers support to 4-H and FFA.
    - \* The Foundation makes quarterly payments to DATCP for operational costs of the Council.
    - \* The Fundraising Campaign Committee is led by private industry and supportive individuals
  - *From Nov 2008 – Feb 2009 the Council and Foundation utilized the professional guidance of Boris Frank & Associates, to structure the Fundraising Campaign.*
  - *Jan 2009 Gary Olson and Boris Frank met with Michelle of The Solaris Company for a consultation services meeting at DATCP, regarding the need for a Campaign Administrator and or Manager.*
  - *Feb 2009 the Fundraising Committee elected to utilize the services of WAAE Executive Director Bridgett Neu as the Campaign Administrator.*
  - *The Fundraising Committee has had a tremendous learning curve of both coming together to support a new program and in having to solicit financial support during incredibly tough economic times. The committee has found that a change in tactics is beginning to gain traction as they are finding that business support is out there, but businesses are asking that we accept a smaller than normal donation this year with the agreement to revisit next year in hopes of an improved economy.*
  - *Al Herrman, Dick Meske & Gary Olson hosted a Fundraising Endorsement meeting with select members of the 20-year Club of retired agricultural instructors during the 2009 WAAE Professional Development Conference.*

*\* Follow up efforts are underway to mobilize actionable support from the 20-year Club.*

- *During the 2009 WAAE Professional Development Conference, the WAEF awarded six grants to support agricultural education instructional improvement at the high school level. Over thirty competitive grant applications were received from agricultural programs across the state.*
- *Al Herrman and Gary Olson engaged in a pro-bono telephone conference with a Milwaukee-based marketing firm regarding marketing strategies in the current economic situation of the nation.*

Annually report to the Wisconsin Legislature, state agencies, educational institutions and private sector regarding the challenges and opportunities for the educational and workforce development needs of Wisconsin and provide recommendations for change necessary to attract, develop and retain the superior human capital required to grow Wisconsin's production agriculture, agri-business, food, and natural resource sectors.

- *The first draft of the Annual Report has been prepared by ad hoc teams respective to the required components of the report. Such report will be finalized during the Aug 3<sup>rd</sup> Council meeting and delivered to the appropriate parties in September.*

*Teams include:*

- \* *Criteria Evaluation*
- \* *Executive Review*
- \* *K-12 "Agricultural Education"*
- \* *Post-Secondary 4-year "Agricultural Education"*
- \* *Post-Secondary Technical College System "Agricultural Education"*

#### *WI FFA Foundation*

- *The Council is working with the Foundation's Executive Director and the FFA Association regarding options to support the "Life Work," venue held annually during WI State FFA Convention.*
- *Al Herrman and Gary Olson met with newly hired FFA Foundation Executive Director Nicole Schmidt to establish greater communication between our two organizations regarding fund raising.*

#### *WI Agribusiness Council*

- *The Council is collaborating with the WI Agribusiness Council regarding promotion of their printed "Ag Career Pathways" booklet that is aimed at high school students, Ag teachers and Guidance Counselors.*
- \* *The booklet is being connected to the Council's website.*

#### *WI Green Industry*

- *The Council is working with the President of the WI Green Industry to facilitate collaboration between the "WI Green Industry" and the Council.*

#### *Team Ag Ed*

- *Team Ag Ed officially adopted the WAEWD Council to become part of their organization.*
- *Gary Olson will be meeting with Team Ag Ed during their November 2009 meeting, to discuss collaboration opportunities and acquire their prioritized action needs from the Council.*

#### *WI Dept of Tourism*

- *The Council has reached out to the WI Dept of Tourism, exploring options for collaboration.*

#### *WI Technical College System & DATCP*

- *The Council worked with members of the WI Technical College System, the Farm Center of DATCP and UW-Extension to develop and conduct outreach forums. Loan Officers, Veterinarians, Implement Dealers and etc dealing directly with Production Agriculturalists received training on active listening skills, identifying signs of stress & suicide, and more.*

## Panel Recommendations

The following recommendations were developed by the Wisconsin Agriculture Education Panel and provided in report form to Wisconsin's Secretary of Agriculture on July 29<sup>th</sup> 2004. The final report is titled: "Developing Human Capital Needed To Grow Wisconsin Agriculture," Secretary's Panel on Agricultural Education, Wisconsin Department of Agriculture, Trade and Consumer Protection

[http://www.datcp.state.wi.us/aboutus/leadership/pdf/Ag\\_Ed\\_Panel\\_Final\\_Report\\_August.pdf](http://www.datcp.state.wi.us/aboutus/leadership/pdf/Ag_Ed_Panel_Final_Report_August.pdf)

1. Every K-12 Agricultural Education Program establishes and utilizes an advisory committee including the implementation of the Academic Standards for Agricultural Education.
2. K-12 agriculture teachers should have certification in additional areas such as science, or technology education.
3. University of Wisconsin System institutions should accept science-based agriculture coursework as science credit for admission purposes.
4. Every K-12 Agriculture Education Program should establish a local support group for agriculture education such as the FFA Alumni.
5. Establish a joint state-wide agricultural education advisory committee for the K-12 System and the Technical College System
6. Beginning in the 4th grade and continuing through high school, students gain an understanding and should be able to explain and give examples of the economic and social values derived from the agriculture, food and natural resources systems and other important sectors of the state's economy.
7. Aggressively recruit underrepresented populations into Wisconsin's agricultural educational programs and occupations to ensure they exceed the percentage they represent in our state's population.
8. Expand entrepreneurship training and recognition for those who have demonstrated the capacity for creativity and the willingness to assume risk in agricultural enterprises.
9. Expand beginning farmers programs.
10. Formalize the relationship between the programming of local schools and technical colleges, and other higher education institutions and the economic drivers of the service area(s) for purposes of a seamless system.
11. Secure the means to routinely and systematically sample and report statewide supply and demand for skilled workers, technicians, managers and professional in Wisconsin's agriculture, food and natural resources systems.
12. Ensure that leadership development be a fundamental and continuing element in fully implemented programs of agricultural education at every educational level.
13. Agricultural educators and industry leaders should take individual responsibility to exhibit and promote positive images about their professions and about career related to agriculture, food and natural resources.
14. Increase staff at the Wisconsin Department of Public Instruction by one person to provide leadership in support of agricultural education in the public schools.
15. Ensure that K-12 agricultural education teachers have full-time year-round employment which includes a 40-day extended contract for purposes of instructional programming that focuses on agricultural career development and youth leadership.
16. Agricultural education at all levels should actively recruit to establish new agricultural education programs where programs do not exist and where they can be justified by local needs and support.

17. Support the continued growth in enrollments in agriculture teacher preparation programs and programming leading to Master's degrees and other advanced degrees.
18. Enhance the quantity and relevance of applied research in agriculture, food and natural resource systems of Wisconsin to develop industries, generate new ideas and provided educational relevance.
19. Expect the Wisconsin Technical College System and University of Wisconsin-Extension to continue to work closely together in program planning and implementation at the local, regional and state levels.
20. Develop a technical assistance team with the mission to immediately follow-up on the recommendations of this Panel, and creating a statewide entity with dedicated funding to staff and carry out the intent of the principles embodied in the recommendations.

## Executive Evaluation

The Wisconsin Agricultural Education and Workforce Development Council was authorized by Wisconsin Act 223. The Council has held three organizational meetings and hired an Executive Director who began his duties in November 2008. The majority of the first six months has involved organizing the Council, meeting with key constituents to identify future direction, and establishing a structure that will allow the Council to fulfill its mission.

The following criterion was developed to evaluate the first six months of operation.

**Was appropriate input utilized and did the Council establish a vision, mission, and objectives that will fulfill the desires of the legislation and that will serve Wisconsin agriculture well?** Initial drafts created by formation committees were vetted by the Council, reviewed by fundraising experts, and refined to provide a clear **vision** "*Grow Wisconsin's ability to compete by creating a stronger and sustainable workforce*" a defined **mission** "*Attract, develop and retain the premium workforce required to Grow Wisconsin's agricultural industry, food, and natural resource systems*" and actionable **objectives**. A complete Vision, Mission and Objectives can be found in this report.

**Are the three elements clear and easily understood by those we hope to impact?** Response to the revision has been positive. They are very clear and precise.

**Was a director hired who provides the credentials, passion, and organizational skills to achieve the objectives and mission?** The Executive Director clearly and genuinely demonstrates his passion for agriculture, especially agricultural education. In the first few months of operation the director has reached out to the multitude of organizations that touch workforce development and agricultural education; but often perform in separation of one another.

The director's military experiences, educational background and understanding of agriculture make him very well suited to champion great success for the Council. But as confirmed in discussions with other states with similar programs, the complexity of large council relationships is daunting and can take time to coordinate. It is incumbent on the Council and Executive Committee, with input from key constituents, especially private industry, to establish ranked priorities. Further clear expectations with measurable objectives and action plans are critical.

**What are some examples of early steps by the director which demonstrate evidence of good leadership for this position?** The Executive Director has attempted to engage all Council members in the performance of committee functions and promotion of the Council mission. He has met individually with most members in person and all members by phone and e-mail communication. He has acquired a tremendous amount of input and identified where each can provide value. He has adjusted his earlier attempts to let Council members take the lead in determining their involvement to now reaching out to Council members and requesting specific involvement in target areas.

The Executive Director has been proactive in reaching out to the key educational agencies and organizations in the state including the Department of Public Instruction, WI Technical College System, UW-Extension, WI Association of Agricultural Educators, FFA Foundation, FFA Alumni Association, WI Agribusiness Council, the Department of Workforce Development, the Department of Commerce, the Department of Tourism, and others. He has engaged in discussions with them about the roles that each can play with the Council to encourage young people to choose a career in agriculture and to strengthen the state's agricultural education infrastructure.

The Director spends considerable time meeting with the multitude of organizations, institutions and interested parties in efforts, to obtain input on their needs and priorities, and to identify key initiatives for the Council, and to advocate for awareness and understanding of the Council mission.

He is increasingly pursuing opportunities to bring greater access of industry to education and vice versa. Most notable are his efforts to connect these various groups, (education, government and industry alike) to one another towards common goals for the good of agriculture and the state's economy.

**Was the Board structured effectively through the following to get the Council organized and launch its objectives:** The Council structure was specified in Act 223. That design purposely brings together private industry, educational institutions, state government and the Legislature to address education and workforce development needs.

1. **An Executive Committee design:** An Executive Committee, specified by Act 223, has been implemented and officers selected. The Committee is led by private industry, but also includes representatives from DATCP, DPI and WAAE.
2. **Standing committees:** Standing committees, in addition to the Executive Committee, including Fund raising and Finance, Communications, Annual Report, and Research.
3. **Ad hoc committees:** The Executive Director has used ad hoc committees to draft portions of this Report, develop evaluation criteria for the Council, to identify and acquire resources for educational seminars and instructional materials.

**What evidence is apparent the committees are functioning units (number of meetings, activities, etc.)?** On an ad hoc basis, several committees provided input toward this Report. As an example of a standing committee, the Finance Committee drafted a budget, developed initial targets, hired an external advisor, developed materials and launched the fundraising effort. Due to significant changes in the economy and the Council being a new organization the campaign strategy and fundraising tactics have been changed. The strategy is to simultaneously focus on:

1. Near-term: smaller annual and one-time gifts to support ongoing operations during the current recession.
2. Intermediate: \$500 - \$5,000 corporate and \$50 – \$250 individual multi-year gifts to sustain the Council and WAEF efforts.
3. Long-term: larger foundational and corporate gifts that will create and support structured initiatives that implement the recommendations of the WAEWDC and support the WAEF.

There have been several meetings and conference calls by all committees. Also there is commitment from committee members based on their input and attendance.

**Have the Council's agendas been meaningful to provide the vision and create the energy required of its members?** The Council has met three times. The first meeting dealt with organizational and implementation issues. The second meeting presented initial research findings and feedback from Council membership on key educational issues. The third meeting focused on actions to acquire private industries labor related needs, trends and challenges. The council had direct input into establishing the vision, mission and objectives. The Council has also established the priorities and focus for the first full year of operation.

With the Council being as large as this one is and with it's individual members being vastly spread out both geographically and in expertise from one another, actionable synergy is being best demonstrated through small working groups with specific tasks towards collective needs.

**Has the fundraising been organized in a professional manner and has the grassroots network been mobilized to have an effective campaign?** The Fundraising Committee was organized within the WI Agricultural Education Foundation and a consultant was hired to assist the committee organize the efforts and to develop campaign materials. The Foundation is a 501 (C) (3) organization.

The initial campaign targeted medium sized gifts of (\$10,000 - \$25,000 over four years) from corporations, foundations, and individuals. The campaign was launched and the economic downturn resulted in extremely poor results. As stated above, the fundraising has been restructured and now employs a three-pronged approach.

Efforts are well underway to organize a grass roots team, primarily made up of retired agricultural instructors located in all regions of the state, to help carryout the first phase.

The economic situation has put a strain on the fund-raising effort from the agricultural industry. However, despite this challenge, the WAEWDC has had some success in generating the necessary operational funds for its first year of work. Legislators need to understand the importance of the agricultural industry to the economic health and recovery of Wisconsin. With that in mind, the industry has shown dedicated support of time, talent, product, and treasury to get the WAEWDC up and running.

The Council believes it is now time for the state of Wisconsin to make the future of Wisconsin's agriculture and its workforce a priority and support the Council's vital activities and mission by passing legislation to fully fund the Council and its mission. Such support will enhance the Council's role in collaborating and supporting many of it's educationally based stakeholders who often solicit financial support from mirrored prospect lists within the state.

**What are actual action steps that are in process to establish the benchmarking system to measure the Council's objectives?**

- If not readily available, are steps being taken to create such?

*Steps are being taken.*

- In addition, the subcommittee recommends the report include some bullet points:
  - of what the Council believes to be the three to five highest priorities in the near future.
  - that create value in the Council and provide "one-liners" for legislatures to communicate our activities.

**Right people, right skills, right place, right time.**

Make sure we target the right group of people – Not only the youth at an early age but the parents so they understand and support their child's decision.

## **Agricultural & Natural Resource Education in Wisconsin - Detail**

### **Public Schools K-12**

"Agriculture", "agricultural system," and "food, fiber, and natural resources" are all interchangeable terms used when referring to agricultural education in Wisconsin. These terms encompass the production of agricultural commodities, including food, fiber, wood products, horticultural crops, and other plant and animal products. Agriculture, however, extends beyond production to include the financing, processing, marketing, and distribution of agricultural products; farm production supply and service industries; health, nutrition and food consumption; the application of science; the use and conservation of land and water resources; development and maintenance of recreational resources; and related economic, sociological, political, environmental, and cultural characteristics of the food and fiber system.

Today's academic standards for agriculture education address two major elements: agricultural literacy (education about agriculture) and agricultural education (education in agriculture). Agricultural literacy is a target for all students. They should receive systematic instruction about agriculture beginning in kindergarten and continuing through grade 12. Agriculturally literate people have knowledge of food and fiber production, processing, food safety, and domestic and international marketing. They understand the impact of agriculture on the environment. They have practical knowledge about lawns, gardens, recreational areas, and caring for animals, especially household pets. However, some students will choose agriculture as a career. They will be interested in agricultural education as well as agricultural literacy.

Specialty areas such as veterinary science, equine science, food science and safety, biotechnology, agricultural mechanics, emu production, aquaculture, horticulture and landscaping, as well as deer, elk, and bison production reflect the unique nature of agricultural education programs across the state. With such variety, flexibility is critical. Students in districts with an agricultural education program have the opportunity to have a comprehensive agricultural education experience.

Classroom learning, workplace learning (supervised agricultural experience), and activities learned through the student organization (FFA) that connects the first two components with their community comprise the agriculture education program. Students can make sense of their learning in the context of agricultural systems with added opportunities for entrepreneurship through this three-prong approach. This approach is made possible through an extended day contract during the summer months for agricultural education instructors.

Today's agricultural education programs continue to strive for excellence. Over the past three years more than 46,000 students per year have participated in one of the 250 agricultural education programs. During this period of time, a number of exciting educational opportunities and initiatives have evolved in Wisconsin agricultural education. The Department of Public Instruction has led innovative steps to increase rigor and relevance in agricultural education to insure students graduate with skills needed to succeed in the workforce and post secondary education.

## **Student Organization Successes**

The Wisconsin Association of FFA (<http://www.wisconsinffa.org/>) had many great accomplishments this past year.

The 80<sup>th</sup> State FFA Convention held in June was a great success. Over 3,400 members and guests were in attendance. Wisconsin has a great team of people – state officers, advisors and volunteers – who work collaboratively to bring this convention together and make it an outstanding opportunity for young people.

This year two new events were added: the “Day of Service” was a new activity, with about 100 members participating in four different service locations; and the first “High School Quiz Bowl” competition, consisting of 16 teams, was a big success. The continuation of the “Change Lives, Teach Agricultural Education” program, as well as the school officials program, entitled “Agricultural Education, A Smart Investment,” complemented the array of programs and workshops.

FFA membership continued to stay strong with over 17,600 members. Wisconsin Association of FFA membership has sustained over 17,000 members since the 2004-2005 school year.

Over 3,500 FFA members participated in leadership workshops throughout the year, along with over 1,100 members who competed in career development speaking contests and over 4,000 FFA members competing in career development events ranging from agriculture mechanics to environmental and natural resources.

## **Enhancing Rigor and Relevance in Agriculture Education programs**

In September 2007, the State Superintendent of Public Instruction convened an Agriculture/Science Equivalent Credit Task Force that consisted of science and agriculture educators throughout the state. The task force engaged in two face-to-face meetings and communicated regularly via electronic mailings. An internal work group was established at DPI. This group worked with the task force to develop implementation strategies for each of the task force recommendations.

The task force advanced recommendations about agriculture courses being counted toward high school graduation credits in science to ensure that all students receive the knowledge and skills that are consistent with the high school task force recommendations and the tenants of the American Diploma Network and the Partnership for 21<sup>st</sup> Century Skills. The task force recommendations call for renewal of the high school graduation equivalency process. Section PI 18.02, Wis. Admin. Code, defines “equivalent graduation policy” as “a board policy which meets the credit requirements specified in s. 118.33, Wis. Stats. for each subject area, but which permits selected equivalent courses as long as such courses contain the time allotment and substantially the same objectives to develop the knowledge, concepts, and skills of the course for which an equivalent is proposed.” This high school course equivalency option for a district is not new; however, the process for seeking DPI approval in the area of agriculture and science course equivalency has been updated. As part of the renewed equivalency, the task force developed a crosswalk of the agriculture and science standards. This crosswalk will be the foundation for determining content rigor and equivalency for an agriculture course that may be used to meet a high school graduation requirement for science.

The task force also called for DPI to convene a group of educators to examine the PI 34 licensing process for obtaining either a science or an agriculture license and to report on the likelihood of developing a new agriculture/science license.

A relevant question is whether or not an equivalent course meets high school graduation and established university or college entrance requirements. The approved agriculture/science equivalent courses do meet high school graduation requirements. DPI has also worked with the University of Wisconsin System to ensure that DPI approved agriculture equivalent courses will also fulfill science course-taking requirements for college

admission. To date there are 29 school districts and 72 agriculture education courses approved to offer the agriculture/science equivalent credit.

To enhance the integration and rigor of science in agriculture education courses, many schools are using curriculum from the Center for Agricultural and Environmental Resource Technology (CAERT). CAERT, Inc., supplies agricultural education lesson plans, electronic short textbook-like readings, called E-Units, as well as on-line assessment questions that are aligned with Wisconsin's model academic standards. The lesson plans can be assembled to local needs and the curriculum is cross-walked to the Wisconsin model academic standards.

Over 160 Wisconsin Agriculture Education programs are utilizing the CAERT materials. They are able to provide documentation for educational standards being met in their classroom curricula. The diversity of CAERT's materials lends itself well to local control over the curriculum. It is a curricular tool that helps programs identify and align specific course content and validates the quality of the curriculum.

## Career Clusters/Programs of Study

Wisconsin has embraced the national Career Clusters and Pathways model for delivering contemporary career and technical education programming. This is an important initiative to reform education by providing students with a pathway to careers and expanding opportunities to gain knowledge and skills necessary for success in today's 21<sup>st</sup> century. The Career Clusters model includes 16 broad career clusters and 79 pathways; the model aligns educational programming, both academic and technical skills training, around a common set of knowledge and skill statements that have been identified by industry leaders at the national level.

This cluster and pathway model requires schools to:

- Actively engage business partners and other stakeholders;
- Utilize labor market information to determine educational programming and focus on communities' needs;
- Integrate academic and career and technical education content;
- Align secondary education with postsecondary education so that students can see the importance of their high school experiences and how it's connected to future education and employment opportunities.

There are career clusters and pathways to address all types of occupations. While agriculture education supports the development of knowledge and skills in numerous pathways, Table A highlights the clusters and pathways most closely related to the work of this council.

Table B and C are sample Programs of Study from the Agriculture, Food and Natural Resources and STEM clusters. The first four columns of the Programs of Study include academic courses that are recommended for this pathway. It also identifies the Career & Technical Education courses that are central to this pathway and outlines other experiences that are helpful for students, including student organization involvement or work-based learning. The Program of Study also includes sample occupations related to this pathway so students can see the relevance of their coursework and open their eyes to the numerous possibilities that exist for a career in this area.

While this is a voluntary program, schools receiving federal Carl Perkins funds are required to use those funds to develop career pathways. Already, 370 of the school districts with high schools are engaged in incorporating career clusters in their career and technical education programs. Table D illustrates the number of pathways under development as identified by school districts in Carl Perkins grant applications for the 2008-09 school year. In the Agriculture, Food and Natural Resources Career Cluster 304 POS's have been established throughout the state. Of those Plant Systems POS and Animal Systems POS are ranked in the top 10 for largest number of POS's in our local career and technical education departments.

Strong agricultural education programming is paramount to preparing students for postsecondary education and the agricultural workforce. The career clusters and pathways model along with the science equivalency process

is providing new options to support students in their academic and career development. The effort to build more rigor and relevance into the curriculum is critical to preparing our students for the 21<sup>st</sup> century. Furthermore, today's student need critical thinking, problem solving, collaborative communication skills, people skills, personal responsibility, ethics and nimbleness. The agricultural education model emphasizing rigorous instruction, work-based learning and leadership through the FFA, provides a holistic framework to meet these challenges.

| <b>i) Table A. Sixteen Career Clusters and Their Pathways</b>  |  |
|--|--|
| <p style="text-align: center;"><b>ii) Agriculture, Food and Natural Resources</b></p> <p>Agribusiness Systems<br/>Animal Systems<br/>Environmental Service Systems<br/><b>Food Products and Processing Systems</b><br/>Natural Resources Systems<br/><b>Plant Systems</b><br/>Power, Structural and Technical Systems</p> <p style="text-align: center;"><b>iii) Architecture and Construction</b></p> <p>Construction<br/>Design/Pre-Construction<br/>Maintenance/Operations</p> <p style="text-align: center;"><b>iv) Arts, Audio/Video Technology and Communications</b></p> <p>Audio and Video Technology and Film<br/>Journalism and Broadcasting<br/>Performing Arts<br/>Printing Technology<br/>Telecommunications<br/>Visual Arts</p> <p style="text-align: center;"><b>v) Business Management and Administration</b></p> <p>Administrative Support<br/>Business Information Management<br/>General Management<br/>Human Resources Management<br/>Operations Management</p> <p style="text-align: center;"><b>vi) Education and Training</b></p> <p>Administration and Administrative Support<br/>Professional Support Services<br/>Teaching/Training</p> <p style="text-align: center;"><b>vii) Finance</b></p> <p>Accounting<br/>Banking Services<br/>Business Finance<br/>Insurance<br/>Securities and Investments</p> <p style="text-align: center;"><b>viii) Government and Public Administration</b></p> <p>Foreign Service<br/>Governance<br/>National Security<br/>Planning<br/>Public Management and Administration<br/>Regulation<br/>Revenue and Taxation</p> <p style="text-align: center;"><b>ix) Health Science</b></p> <p>Biotechnology Research and Development<br/>Diagnostic Services<br/>Health Informatics<br/>Support Services<br/>Therapeutic Services</p> | <p style="text-align: center;"><b>x) Hospitality and Tourism</b></p> <p>Lodging<br/>Recreation, Amusements and Attractions<br/>Restaurants and Food/Beverage Services<br/>Travel and Tourism</p> <p style="text-align: center;"><b>xi) Human Services</b></p> <p>Consumer Services<br/>Counseling and Mental Health Services<br/>Early Childhood Development and Services<br/>Family and Community Services<br/>Personal Care Services</p> <p style="text-align: center;"><b>xii) Information Technology</b></p> <p>Information Support and Services<br/>Network Systems<br/>Programming and Software Development<br/>Web and Digital Communications</p> <p style="text-align: center;"><b>xiii) Law, Public Safety, Corrections and Security</b></p> <p>Correction Services<br/>Emergency and Fire Management Services<br/>Law Enforcement Services<br/>Legal Services<br/>Security and Protective Services</p> <p style="text-align: center;"><b>xiv) Manufacturing</b></p> <p>xv) Production<br/>xvi) Manufacturing Production Process Development<br/>xvii) Maintenance, Installation and Repair<br/>xviii) Quality Assurance<br/>xix) Logistics and Inventory Control<br/>xx) Health, Safety and Environmental Assurance</p> <p style="text-align: center;"><b>xxi) Marketing</b></p> <p>Marketing Communications<br/>Marketing Management<br/>Marketing Research<br/>Merchandising<br/>Professional Sales</p> <p style="text-align: center;"><b>xxii) Science, Technology, Engineering and Mathematics</b></p> <p>xxiii) Engineering and Technology<br/>xxiv) Science and Math</p> <p style="text-align: center;"><b>xxv) Transportation, Distribution and Logistics</b></p> <p>Facility and Mobile Equipment Maintenance<br/>Health, Safety and Environmental Management<br/>Logistics Planning and Management Services<br/>Sales and Service<br/>Transportation Operations<br/>Transportation Systems/Infrastructure Planning, Management, and Regulation<br/>Warehousing and Distribution Center Operations</p> |

|  |  |  |  |   |  | <b>District</b>   |  |   |  |  |
|--|--|--|--|---|--|---|--|---|--|--|
|  |  |  |  |   |  | <b>High School</b>  |  |   |  |  |
|  |  |  |  |   |  | <b>Career Cluster</b>   | Agriculture, Food & Natural Resources  |   |  |  |
|  |  |  |  |   |  | <b>Pathway</b>  | Food Products and Processing Systems   |   |  |  |
| <b>Program of Study Plan</b>   |  |  |  |   |  |   |  |   |  |  |
| This <i>Program of Study Plan</i> should serve as a guide in the development of a secondary/post-secondary pathway for a secondary Perkins funding application. Courses listed within this plan are only recommended and are indicative of the courses needed to complete a pathway. |  |  |  |   |  |   |  |   |  |  |
| EDUCATION LEVEL  | GRADE  | English/<br>Language Arts                            | Math   | Science   | Social Studies/<br>Sciences  | Career and Technical Courses<br><i>Central to this Pathway</i>  | Other Career and<br>Technical Education<br>Courses, Electives, and<br>Student Organizations<br><i>Related to the Pathway</i>                           | SAMPLE<br>Occupations Relating<br>to This Pathway   |  |  |
| Career Interest Inventory Administered and Program of Study Initiated for all Learners.  |  |  |  |   |  |   |  |   |  |  |
| <b>SECONDARY</b>   | 9  | English 9  | Algebra  | Biological or<br>Physical Science                         | Early American<br>Studies  | Introduction to Agriscience<br>Biological Science Applications in<br>Agriculture                                | ▶FFA<br>▶Supervised Agricultural<br>Experience (SAE)   | ▶Agricultural<br>Communications<br>Specialist<br>▶Agricultural Educator<br>▶Agricultural Salesperson<br>▶Bacteriologist<br>▶Biochemist-Nutritionist<br>▶Bioengineer<br>▶Dietician<br>▶Food and Drug Inspector<br>▶Food and Fiber Engineer<br>▶Food Meal Supervisor<br>▶Food Processor<br>▶Food Scientist<br>▶Meat Cutter-Meat Grader<br>▶Meat Processor<br>▶Meat Science Researcher<br>▶Microbiologist<br>▶Produce Buyer<br>▶Quality Control Specialist |  |  |
|  | 10   | English 10   | Geometry   | Biological or<br>Physical Science                         | U.S. History   | Biological Science Applications in<br>Agriculture<br>Animal Science   | ▶Career Development<br>Events<br>▶Service Learning   |   |  |  |
|  | 11   | English 11   | Algebra II<br>Pre Calculus                           | Chemistry   | World History  | Advanced Food Products and<br>Processing<br>Agribusiness Management   | ▶Courses in Business and<br>Marketing Education<br>▶Courses in Family and<br>Consumer Education  |   |  |  |
|  | College Placement Assessments-Academic/Career Advisement Provided (ACT, SAT, etc.) |  |  |   |  |   |  |   |  |  |
|  | 12   | English 12   | AP Statistics  | AP Biology<br>AP Chemistry<br>AP Environmental<br>Science | Social Studies<br>electives  | Advanced Food Products and<br>Processing<br>Food Products and Food Processing<br>Systems Co-op                  | ▶Courses in Technology<br>and Pre-Engineering<br>▶Courses in World<br>Languages<br>▶Other School clubs or<br>activities that relate to this<br>pathway |   |  |  |
| <b>Gen Ed Courses</b>  |  |  |  |   |  |   |  |   |  |  |
| <b>POST-SECONDARY</b>  | 13   | Communications<br>Skills 1                           | Math with<br>Business<br>Applications                | Principals of<br>Animal Biology                           | Contemporary<br>American Society                                       | Food and the Consumer Scientific<br>Study of Food Products and<br>Processing Systems                            | FFA/SAE<br>Post-secondary Agricultural<br>Student Organization   |   |  |  |
|  | 14   | Technical<br>Reporting                               | College Algebra                                      | Biological Science<br>Botany<br>Tech. Chemistry           | Economics<br>Psychology of<br>Human Relations                          | Principles of Food Processing<br>Food Product Development<br>Food Laws, Regulations and<br>Regulatory Processes | FFA/SAE<br>Post-secondary Agricultural<br>Student Organization   |   |  |  |
|  | <b>Courses Related to Major or Minor</b>   |  |  |   |  |   |  |   |  |  |
|  | 15   | Technical Writing                                    | Statistics   | Biochemistry/<br>Microbiology                             | Political<br>Science   | Continue courses in the area of<br>specialization in Food Products and<br>Processing Systems                    | FFA/Supervised Agricultural<br>Experience  |   |  |  |
| 16   | Continue courses<br>in the area of<br>specialization                               | Continue courses<br>in the area of<br>specialization | Continue courses<br>in the area of<br>specialization | Continue courses<br>in the area of<br>specialization      | Complete Food Products and<br>Systems Major (4-Year Degree<br>Program) | FFA/Supervised Agricultural<br>Experience   |  |   |  |  |
| Advanced Placement = AP, Dual/Transcripted Credit = D/TC, Youth Options = YO   |  |  |  |   |  |   |  |   |  |  |

| Table C   |  | District                                       |  |  |  |   |  |  |  |  |  |  |
|---|--|--|--|--|--|---|--|--|--|--|--|--|
|   |  | High School                                    |  |  |  |   |  |  |  |  |  |  |
|   |  | Career Cluster                                 |  |  |  |   |  | Science, Technology, Engineering & Mathematics (STEM)  |  |  |  |  |
|   |  | Pathway  |  |  |  |   |  | Science and Math   |  |  |  |  |
| <b>Program of Study Plan</b>  |  |  |  |  |  |   |  |  |  |  |  |  |
| This <i>Program of Study Plan</i> should serve as a guide in the development of a secondary/post-secondary pathway for a secondary Perkins funding application. Courses listed within this plan are only recommended and are indicative of the courses needed to comp |  |  |  |  |  |   |  |  |  |  |  |  |
| EDUCATION LEVEL   | GRADE  | English/ Language Arts                         | Math   | Science  | Social Studies/ Sciences                       | Career and Technical Courses <i>Central to this Pathway</i>   | Other Career and Technical Education Courses, Electives, and Student Organizations <i>Related to the Pathway</i>   | SAMPLE Occupations Relating to This Pathway  |  |  |  |  |
| Career Interest Inventory Administered and Program of Study Initiated for all Learners.   |  |  |  |  |  |   |  |  |  |  |  |  |
| <b>SECONDARY</b>  | 9  | English 9                                      | Algebra I                                      | Biological or Physical Science                 | World History<br>Civics or<br>World Geography  | Introduction to Agriscience<br>Biological Science Applications in Ag<br>Physical Science Applications in Ag                                 | <ul style="list-style-type: none"> <li>▶ FFA</li> <li>▶ Agriscience Fair</li> <li>▶ Supervised Agricultural Experience (SAE)</li> <li>▶ Career Development Events</li> <li>▶ Service Learning</li> <li>▶ Courses in Business and Marketing Ed</li> </ul> | <ul style="list-style-type: none"> <li>▶ Analytical Chemist</li> <li>▶ Anthropologist</li> <li>▶ Applied Mathematician</li> <li>▶ Archeologist</li> <li>▶ Astronomer</li> <li>▶ Astrophysicist</li> <li>▶ Atmospheric Scientist</li> <li>▶ Biologist</li> <li>▶ Botanist</li> <li>▶ Chemist</li> <li>▶ Ecologist</li> <li>▶ Economist</li> <li>▶ Environmental Scientist</li> <li>▶ Geneticist</li> <li>▶ Geologist</li> <li>▶ Geophysicist</li> <li>▶ Marine Scientist</li> </ul> |  |  |  |  |
|   | 10   | English 10                                     | Geometry or Algebra II                         | Biological or Physical Science                 | U.S. History                                   | Biological Science Applications in Ag<br>Introduction to Animal Science<br>Companion Animal Science<br>Introduction to Plant (Horticulture) |  |  |  |  |  |  |
|   | 11   | English 11                                     | Algebra II or Trigonometry                     | Physics  | Economics<br>Psychology                        | Yer Science<br>Equine Science<br>Agribusiness Management<br>Food Products and Processing<br>Plant and Soil Science                          |  |  |  |  |  |  |
|   | College Placement Assessments-Academic/Career Advisement Provided (ACT, SAT, etc.) |  |  |  |  |   |  |  |  |  |  |  |
|   | 12   | English 12                                     | Calculus                                       | Chemistry or Biology II                        | Government                                     | Animal & Plant Systems Co-op<br>D/TC Advanced Animal Science<br>D/TC Biotechnology<br>Agriculture Mechanics and Technology                  |  |  |  |  |  |  |
| <b>Gen Ed Courses</b>   |  |  |  |  |  |   |  |  |  |  |  |  |
| <b>POST-SECONDARY</b>   | 13   | Communications Skills 1                        | Math with Business Applications                | Principals of Animal Biology                   | Contemporary American Society                  | Orientation to Animal & Plant Science<br>Survey of the Animal and Plant Industry  | FFA/SAE<br>Post-secondary Agricultural Student Organization  |  |  |  |  |  |
|   | 14   | Technical Reporting                            | College Algebra                                | Biological Science/Botany                      | Economics<br>Psychology of                     | Animal Anatomy and Physiology<br>Working with Animals   | FFA/SAE<br>Post-secondary Agricultural   |  |  |  |  |  |
|   | <b>Courses Related to Major or Minor</b>   |  |  |  |  |   |  |  |  |  |  |  |
| 15  | Technical Writing  | Statistics                                     | Biochemistry/ Microbiology                     | Political Science                              | Continue courses in the area of specialization | Continue courses in the area of specialization  | FFA/SAE<br>Post-secondary Agricultural Student Organization  |  |  |  |  |  |
| 16  | Continue courses in the area of specialization                                     | Continue courses in the area of specialization | Continue courses in the area of specialization | Continue courses in the area of specialization | Continue courses in the area of specialization | Continue courses in the area of specialization<br>(Complete four-year degree)   | FFA/SAE<br>Post-secondary Agricultural Student Organization  |  |  |  |  |  |
| Advanced Placement = AP, Dual/Transcripted Credit = D/TC, Youth Options = YO  |  |  |  |  |  |   |  |  |  |  |  |  |

## Wisconsin Technical College System

The Wisconsin Technical College System (WTCS) provides the state with the critical, essential technical occupations we all rely on. We respond to the needs of our communities by helping one person at a time and by bringing people and jobs together.

The systems' 16 colleges equip graduates with real world, hands-on experience they apply to specific occupations that provide us all with security and quality of life. The technical colleges stimulate local economic development by providing a well-educated workforce based on the occupational needs, as well as providing the innovation to meet emerging opportunities, for local business and industry. From biotech to electronics to health care to public safety – great paying jobs await technical college graduates.

The technical colleges have a long history of offering high quality programs in agriculture and natural resource career pathways. In the 2008-2009 school year, these programs included 16 associate degree programs, six 1-year technical diplomas, one 2-year technical diploma, and two short-term technical diplomas. These programs offer students training in wide variety of agriculture and natural resource related professions including farm business, dairy herd management, veterinary technician, and laboratory science technician (see table 1).

|  |   | PROGRAM          |   | AGRICULTURE, FOOD AND NATURAL RESOURCES |                  |                |           |                 |            |         |           |              |           |                |              |              |              |                     |                     |                 |         |                      |  |
|--|---|------------------|---|---|------------------|----------------|-----------|-----------------|------------|---------|-----------|--------------|-----------|----------------|--------------|--------------|--------------|---------------------|---------------------|-----------------|---------|----------------------|--|
|  |   | Less than a Year | 1-Year Technical Diploma                | 2-Year Technical Diploma                | Associate Degree | Program Number | Blackhawk | Chippewa Valley | Fox Valley | Gateway | Lakeshore | Madison Area | Mid-State | Milwaukee Area | Moraine Park | Nicolet Area | Northcentral | Northeast Wisconsin | Southwest Wisconsin | Waukesha County | Western | Wisconsin Indianhead |  |
|  | A | 10-006-2         | Agri-Business/Science Technology        |   |                  |                |           |                 |            |         |           |              |           |                |              |              |              |                     |                     |                 |         |                      |  |
|  | A | 10-070-1         | Agricultural Equipment Technology       |   |                  |                |           |                 |            |         |           |              |           |                |              |              |              |                     |                     |                 |         |                      |  |
|  | @ | 32-070-1         | Agricultural Power & Equip. Technician  |   |                  |                |           |                 |            |         |           |              |           |                |              |              |              |                     |                     |                 |         |                      |  |
|  | A | 10-003-2         | Agriculture/Outdoor Power Equipment     |   |                  |                |           |                 |            |         |           |              |           |                |              |              |              |                     |                     |                 |         |                      |  |
|  | A | 10-006-3         | Agri-Science Technician                 |   |                  |                |           |                 |            |         |           |              |           |                |              |              |              |                     |                     |                 |         |                      |  |
|  | A | 10-001-5         | Arboriculture – Urban Forestry Tech.    |   |                  |                |           |                 |            |         |           |              |           |                |              |              |              |                     |                     |                 |         |                      |  |
|  | A | 10-484-1         | Biorefinery Technology                  |   |                  |                |           |                 |            |         |           |              |           |                |              |              |              |                     |                     |                 |         |                      |  |
|  | A | 10-007-4         | Bioscience Technician                   |   |                  |                |           |                 |            |         |           |              |           |                |              |              |              |                     |                     |                 |         |                      |  |
|  | o | 31-091-1         | Dairy Herd Management                   |   |                  |                |           |                 |            |         |           |              |           |                |              |              |              |                     |                     |                 |         |                      |  |
|  | A | 10-091-4         | Dairy Science                           |   |                  |                |           |                 |            |         |           |              |           |                |              |              |              |                     |                     |                 |         |                      |  |
|  | A | 10-506-1         | Environmental & Pollution Control Tech. |   |                  |                |           |                 |            |         |           |              |           |                |              |              |              |                     |                     |                 |         |                      |  |
|  | o | 30-090-1         | Farm Business & Production Management   |   |                  |                |           |                 |            |         |           |              |           |                |              |              |              |                     |                     |                 |         |                      |  |
|  | o | 30-090-2         | Farm Management                         |   |                  |                |           |                 |            |         |           |              |           |                |              |              |              |                     |                     |                 |         |                      |  |
|  | o | 31-080-4         | Farm Operation                          |   |                  |                |           |                 |            |         |           |              |           |                |              |              |              |                     |                     |                 |         |                      |  |
|  | A | 10-325-1         | Golf Course Management                  |   |                  |                |           |                 |            |         |           |              |           |                |              |              |              |                     |                     |                 |         |                      |  |
|  | o | 30-001-3         | Green Industry Technician               |   |                  |                |           |                 |            |         |           |              |           |                |              |              |              |                     |                     |                 |         |                      |  |
|  | A | 10-001-1         | Horticulture                            |   |                  |                |           |                 |            |         |           |              |           |                |              |              |              |                     |                     |                 |         |                      |  |
|  | o | 31-001-1         | Horticulture Technician                 |   |                  |                |           |                 |            |         |           |              |           |                |              |              |              |                     |                     |                 |         |                      |  |
|  | A | 10-091-3         | Laboratory Animal Technician            |   |                  |                |           |                 |            |         |           |              |           |                |              |              |              |                     |                     |                 |         |                      |  |
|  | o | A                | 10-506-4                                | Laboratory Science Technician           |                  |                |           |                 |            |         |           |              |           |                |              |              |              |                     |                     |                 |         |                      |  |
|  |   |                  | 31-506-4                                | Laboratory Science Technician Assistant |                  |                |           |                 |            |         |           |              |           |                |              |              |              |                     |                     |                 |         |                      |  |
|  | A | 10-001-4         | Landscape Horticulture                  |   |                  |                |           |                 |            |         |           |              |           |                |              |              |              |                     |                     |                 |         |                      |  |
|  | A | 10-057-1         | Natural Resources Tech.                 |   |                  |                |           |                 |            |         |           |              |           |                |              |              |              |                     |                     |                 |         |                      |  |
|  | A | 10-482-2         | Renewable Electricity Technician        |   |                  |                |           |                 |            |         |           |              |           |                |              |              |              |                     |                     |                 |         |                      |  |
|  | A | 10-483-1         | Renewable Thermal Energy Technician     |   |                  |                |           |                 |            |         |           |              |           |                |              |              |              |                     |                     |                 |         |                      |  |
|  | A | 10-091-1         | Veterinary Technician                   |   |                  |                |           |                 |            |         |           |              |           |                |              |              |              |                     |                     |                 |         |                      |  |
|  | o |                  | 10-527-2                                | Water Quality Technician                |                  |                |           |                 |            |         |           |              |           |                |              |              |              |                     |                     |                 |         |                      |  |
|  | A |                  | 10-482-1                                | Wind Energy Technology                  |                  |                |           |                 |            |         |           |              |           |                |              |              |              |                     |                     |                 |         |                      |  |

Graduates from agriculture programs in the Wisconsin Technical College System have a very high success rate at being employed in their chosen field of employment. The Wisconsin Technical College System conducts graduate follow-up surveys six month's after graduation on graduate's success rate finding employment as well as median starting salary. For Agriculture programs, the 2008 survey indicates that 94% of Wisconsin Technical College System graduates were employed and 90% were employed in an agriculture related field. The median starting salary for these graduates was \$28,598. In addition, according to the 10-year trend data, most Wisconsin Technical College System Agriculture programs show steady to slightly increasing enrollment. *Agribusiness Division – All*

| Program Name                               | Program Number | No. of Grads | Re-sponses | In Labor Force | Number Employed | Percent Employed | Number Employed Related | Percent Employed Related | Seeking Employment | Median Salary Hourly | Median Salary Annually | Ave. Hours / Week |
|--|----------------|--------------|------------|----------------|-----------------|------------------|-------------------------|--------------------------|--------------------|----------------------|------------------------|-------------------|
| <i>Associate Degree Totals</i>             | 218            | 179          | 160        | 148            | 93%             | 131              | 89%                     | 12                       | \$12.60            | \$28,078             | 43                     |                   |
| <i>Short-Term Technical Diploma Totals</i> | 95             | 65           | 58         | 57             | 98%             | 52               | 91%                     | 1                        | \$8.01             | \$28,598             | 69                     |                   |
| <i>One-Year Technical Diploma Totals</i>   | 55             | 42           | 39         | 37             | 95%             | 35               | 95%                     | 2                        | \$10.87            | \$31,198             | 55                     |                   |
| <i>Two-Year Technical Diploma Totals</i>   | 18             | 16           | 15         | 13             | 87%             | 12               | 92%                     | 2                        | \$10.78            | \$25,218             | 45                     |                   |
| <b><i>Agribusiness Division Totals</i></b> | <b>386</b>     | <b>302</b>   | <b>272</b> | <b>255</b>     | <b>94%</b>      | <b>230</b>       | <b>90%</b>              | <b>17</b>                | <b>\$11.23</b>     | <b>\$28,598</b>      | <b>49</b>              |                   |

The Agriculture Programs in the Wisconsin Technical College System provide an excellent opportunity for Wisconsin's students to obtain the skills necessary for a successful career in agriculture and natural resource fields. Even though the technical colleges have had success in providing this education for our students, there are challenges to continuing this success in the future. Some of those challenges are listed below.

### Challenges:

#### *Financial*

- Lack of resources to add staff or programming
- Operational costs in FBPM
- One-on-one time for instructor and each farm in the program
- Mileage for the instructor

#### *Agriculture Industry Image*

- The inherent uncertainty and risk of farm businesses
- Overall negative impression of agriculture related careers
- Farm families not encouraging sons or daughters to enter agriculture related careers
- Lower wages and longer work hours than other competing career options

#### *Student Demographics*

- Lower number of high school graduates
- Smaller number of students growing up on farms
- Competition from other career paths
- Fewer new producers (FBPM)
- Lack of career awareness for students & their families
- Lack of Career Pathway awareness

# The University of Wisconsin System

## Undergraduate and Graduate Education in Agriculture and Natural Resources

The three largest contributors to the Wisconsin economy are agriculture, forestry and forest products, and tourism. Wise natural resource management is fundamental to all three of these key economic sectors. From water and soils management in agriculture to the health of our managed forests to the scenic values of our woods, waters and wildlife, natural resource management is vital to the Wisconsin economy.

According to the Wisconsin Department of Trade and Consumer Protection, "Wisconsin's farms and agricultural businesses generate more than \$51.5 billion in economic activity and provide jobs for 420,000 people. About one out of every eight state citizens works in a job related to farming."

The University of Wisconsin (UW) System contributes to the retention and growth of these economic sectors through the baccalaureate, masters, and doctoral preparation of agriculture and natural resources professionals, the generation and delivery of basic and applied research information, and the delivery of continuing education and other outreach services. This report focuses on UW System's undergraduate and graduate degree programs.

These programs are offered by UW-Madison College of Agricultural and Life Sciences; UW-Madison School of Veterinary Medicine; UW-Platteville School of Agriculture; UW-River Falls College of Agriculture, Food and Environmental Sciences; and UW-Stevens Point College of Natural Resources. Please see Appendix 1 for a summary of programs and enrollments since 2002.

Total enrollments in all programs in these colleges and schools in the fall 2008 semester were just over 7,000, including 5,700 undergraduate and 1,300 graduate students. From 2002 to 2008, the total growth in undergraduate enrollment in all baccalaureate granting programs in these colleges and schools has been nearly 20%. However, this includes enrollments in some programs that might not be considered "traditional" agriculture- and natural resource-related fields. During the same period, those undergraduate programs most traditionally associated with agriculture and natural resources have grown by 18%.

It should be noted within the context of the mission of the Wisconsin Agricultural Education and Workforce Development Council that three of UW-System's campuses offer baccalaureate degrees in agricultural education to prepare agricultural educators for Wisconsin elementary and secondary schools. Total enrollment in agricultural education has declined by 38% in the past six years.

The college and school deans and director identify the following challenges to UW-System's undergraduate and graduate programs in agriculture and natural resources:

- Doing more to serve a vital and growing agricultural and natural resource sector of Wisconsin's economy with fewer state resources.
- Continuing to attract top faculty and staff professionals in the face of budget cuts and increased workload.
- Continuing to offer top quality education to an ever expanding audience of undergraduate students.
- Increasing racial, ethnic, and gender diversity of agriculture and natural resources student populations.
- Continuing and expanding articulation and collaboration with Wisconsin Technical College System campuses.
- Competition from other majors and career paths with more "flash" than agriculture and natural resource management, particularly as Wisconsin's college-age students increasingly do not possess a farm background

## Specific Information from UW System Campuses

UW-Madison College of Agricultural and Life Sciences (CALs) enrolls about 2,200 undergraduate students in 25 majors within eight different degree areas. These B.S. degree programs are: Natural Sciences; Agricultural Sciences (with concentrations in Production Systems, Business, and Social Science); International Agriculture and Natural Resources; Natural Resources; Agricultural Business Management; Biological Systems Engineering; Dietetics; and Landscape Architecture. The past 10 years have seen a 27% increase in the number of degrees granted each year (from 470 in 1997 to 596 in 2007), and significant shifts in which majors are graduating the most students. Genetics, biochemistry, agricultural journalism, and nutritional sciences/dietetics have all doubled their enrollments. Biology, which graduated its first majors in 2000, now graduates upwards of 100 students per year. This growth, however, has been matched by declines elsewhere, including several fields in the more traditional agricultural and natural resources areas.

In the last two years, the college has begun a major curriculum review (its first in two decades). A new certificate called "CALs International" has just been approved, a new major in environmental science is under development, and a new certificate in global health is being discussed. Each of these new programs is distinguished by its interdisciplinary nature and by the collaboration it requires across multiple departments. In addition, the college is exploring ways to streamline and reconfigure its eight degree programs (under which the 25 majors are offered) to better serve students and the employers and graduate programs they will join after commencement.

In addition, CALs offers the Farm and Industry Short Course for students interested in operating a farm or related agricultural business, but not wanting to commit to a four-year college degree program. The Farm and Industry Short Course is a 17-week educational program uniquely designed to prepare students for careers in agriculture. Students choose from over 40 courses in the areas of soils, crops, poultry, dairy, meat animals and general livestock, horticulture, agricultural engineering, agricultural economics, human relations and communications. The Farm and Industry Short Course provides hands-on instruction by the same CALs faculty who teach four-year students. Classes begin in November and end in March — timed so they won't interfere with the busiest months of the year in agriculture. Upon graduating, students may transfer up to 15 Short Course credits toward a four-year degree. Founded in 1885, the University of Wisconsin Farm and Industry Short Course is the oldest program of its kind in the country. Over 6000 graduates have gone on to productive careers in agriculture.

UW-Madison School of Veterinary Medicine (SVM), one of only 28 veterinary schools in the United States, enrolls 80 students each year into the four-year professional degree (DVM) program, and reserves 60 of those 80 seats for Wisconsin residents. The SVM is particularly concerned with meeting the needs of the dairy industry by seeking and admitting students with a strong interest in rural practice and with characteristics making them likely to pursue that interest.

It has been suggested that the national decline in interest in food animal practice relates in part to population shifts from rural to urban life. There is no question that this demographic shift is an important contributor to the problem. However, the SVM is fortunate that 47-56% of its incoming students continue to come from towns with less than 25,000 residents. Further and on average, 22% of the incoming students for the past six years have noted food animal as their primary career interest, plus an additional 15-18% are interested in mixed animal practices (combining food animal, equine, and small animal practice). Quite naturally, there are some shifts in career interests during the course of the DVM program, but on average over the past five years, 32.3% of the SVM's fourth year clinical students have elected food animal or mixed animal educational tracks, and 40% of the students in the current class of 2009 selected that option. Those data support a conclusion that the SVM is doing well in meeting our mission of supporting agriculture.

Despite those positive data, the SVM has recently launched two new initiatives to increase the interest of high school and undergraduate students in veterinary medicine, but specifically in food animal practice. First, a program called VetMORE (Veterinary Medicine Outreach, Recruitment and Education) is the creation of

current SVM students with interests in food animal practice. Over the past three years, these students have hosted hands-on learning days at the SVM for interested high school students and their high school agriculture instructors, spoken to Wisconsin high school teacher conferences, and created "leave-behind" teaching aids, along with suggested curricular materials, for high school teachers. Second, a program called FAVeMedS (Food Animal Veterinary Medical Scholars) is an admissions and mentoring program targeted to first-year undergraduate students at three UW System colleges with strong animal science programs. Academically-gifted students with long-term interests in food animal veterinary medicine and related animal experiences will be able to apply to the program at the end of their very first year of undergraduate studies. Accepted students who successfully complete a series of specific courses and mentored clinical and research experiences will be automatically offered a position in the DVM program two years later, thus eliminating one year from their undergraduate studies and consequently eliminating one year of additional debt.

UW-Platteville School of Agriculture (SOA) has been growing rapidly along with UW-Platteville's Tri-State Initiative. This initiative, approved in 2003-04 by the Board of Regents and the Wisconsin Legislature, allows Illinois and Iowa students majoring in degree programs related to Wisconsin's most critical workforce needs to enroll for resident tuition plus \$4,000 (for the 2008-09 year) per year. Since the inception of this program in fall 2004, UW-Platteville's total enrollment has grown by 21%; the SOA's enrollments have grown even faster at 27%. The largest growth in the SOA has been in animal science; agricultural business; reclamation, environment and conservation; and soil and crop science. Supporting this growth has been a major initiative to upgrade the SOA's teaching and research facilities on-campus and at Pioneer Farm.

Although UW-Platteville continues to be the only UW System campus enrolling more men than women, the SOA is currently about evenly split with regard to gender. Recruitment of students of color continues to be a priority, but has enjoyed limited success. The SOA made significant strides in the past several years with regard to getting more students to study internationally. Most successful in this effort have been short-term (two to three weeks), faculty-led international experiences; student-to-student exchange programs with universities in the Netherlands and Norway; and study abroad experiences.

UW-River Falls College of Agriculture, Food and Environmental Sciences (CAFES) has increased its student numbers each of the past four years and now has approximately 1300 undergraduate students spread across 15 majors and interdisciplinary programs. Nearly all programs are exhibiting stable or increasing enrollments. Animal Science, particularly the Equine and Pre-Vet emphases, has had the largest growth. Agricultural Business, Conservation, Dairy Science, and Horticulture are also strong majors with over 100 students each. Agricultural Engineering Technology, Crops/Soils, and Environmental Science are smaller programs but are growing steadily. The gender ratio in CAFES students is very close to the UW-River Falls ratio of 40% male/60% female. However, while fewer than 50% of the students in the other three colleges at UW-River Falls are Wisconsin residents, that number is still nearly 75% for CAFES. UW-River Falls has adopted operational goals based around sustainability, global engagement, leadership development, and inclusiveness. CAFES continues to be a leader on campus in sustainability programming. One example is the Sustainable Agriculture option added in the Crops/Soils major; another is involvement in the UW System collaborative Green Business degree program. The college maintains strong international programming efforts through both student study abroad experiences and faculty/staff research and outreach efforts. Faculty are also involved in various leadership development programs, such as those led through the Ag Ed Department, and diversity initiatives, including the Milwaukee Vincent High School program led by the Plant and Earth Science Department.

CAFES continues to emphasize hands-on experiences for its students both inside and outside the classroom. Maintenance and expansion of the Lab Farms, Food Pilot Plants, Greenhouse, and other facilities remains a priority. The Internship program remains strong with increasing opportunities for students.

UW-Stevens Point College of Natural Resources (CNR) continues to grow with respect to freshmen enrollment. It is on track to have the largest freshmen class in our history in fall 2009.

The most popular majors are wildlife and forestry. Soil science is an important offering. While only about 50 of CNR students major in soils, we have nearly 200 soils minors. While paper science and engineering (PS&E) is a small program from an enrollment standpoint, it continues to be very important to the economy of Wisconsin. CNR was recently visited by ABET and is awaiting word on accreditation for the engineering aspect of its paper science program. PS&E graduates enjoy 100% placement at very attractive salary levels; indeed most make more than the base salary of CNR's most junior faculty members.

An area with growth potential is biofuels. CNR has major research projects going on in this area and is hoping to develop minors in biofuels and in alternative energy.

**ENROLLMENTS IN UW-SYSTEM AGRICULTURE AND NATURAL RESOURCES PROGRAMS**

|  | Degree | Fall 2002 | Fall 2003 | Fall 2004 | Fall 2005 | Fall 2006 | Fall 2007 | Fall 2008 |
|--|--------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| <b>University of Wisconsin-Madison / College of Agricultural and Life Sciences</b> |        |           |           |           |           |           |           |           |
| Ag Bus Mgt   | BS     | 65.0      | 56.0      | 61.0      | 50.0      | 51.0      | 57.0      | 68.0      |
| Ag/App Econ  | BS     | 13.0      | 21.0      | 18.5      | 26.5      | 26.5      | 22.5      | 20.5      |
| Agronomy   | BS     | 21.0      | 25.0      | 23.5      | 22.0      | 17.5      | 12.0      | 14.5      |
| Animal Science   | BS     | 135.5     | 133.0     | 137.0     | 139.5     | 142.5     | 148.5     | 130.0     |
| Poultry  | BS     | 5.5       | 6.0       | 4.5       | 2.0       | 2.0       | 1.0       | 3.5       |
| Bacteriology/Microbiology <sup>1</sup> (new name for this major 2008)              | BS     | 98.0      | 102.0     | 87.0      | 64.5      | 55.0      | 84.0      | 24.5      |
| Biochemistry <sup>1</sup>  | BS     | 210.5     | 247.0     | 262.0     | 283.5     | 313       | 406.2     | 338.3     |
| Bio Syst. Eng  | BS     | 61.0      | 60.0      | 56.0      | 60.0      | 60.0      | 61.0      | 61.5      |
| Biology <sup>1</sup>   | BS     | 346.5     | 380.0     | 389.5     | 413.0     | 451.33    | 460.8     | 469.3     |
| Dairy Science  | BS     | 71.5      | 77.0      | 57.5      | 63.5      | 60.5      | 74.5      | 84.0      |
| Entomology   | BS     | 11.5      | 11.0      | 9.5       | 12.5      | 14.5      | 13.0      | 11.3      |
| Food Science   | BS     | 45.0      | 55.0      | 67.5      | 63.5      | 69.0      | 75.5      | 79.0      |
| Forestry Science   | BS     | 41.5      | 39.0      | 31.5      | 36.0      | 33.0      | 30.3      | 29.0      |
| Rec. Res. Mgt  | BS     | 38.0      | 39.0      | 27        | 23.5      | 15.5      | 10.8      | 4.0       |
| Genetics   | BS     | 331.0     | 342.0     | 295.0     | 312.0     | 270.3     | 271.7     | 257.8     |
| Horticulture   | BS     | 62.0      | 66.0      | 63.0      | 70.0      | 54.5      | 54.0      | 57.5      |
| Landscape Arch   | BS     | 144.5     | 157.0     | 135.5     | 129.0     | 135.5     | 130.5     | 131.0     |
| Ag Education   | BS     | 15.0      | 13.0      | 16.5      | 7.5       | 10.0      | 9.0       | 6.5       |
| Ag Journalism <sup>2</sup>   | BS     | 84.0      | 124.0     | 105.0     | 83.0      | 85.3      | 96.0      | 97.5      |
| Dietetics (program folded into Nutritional Sciences)                               | BS     | 128.0     | 68.0      | 33.0      | 8.0       | 2.0       | 2.0       | 3.0       |
| Nutritional Sci <sup>3</sup> (includes Dietetics majors)                           | BS     | 57.5      | 109.0     | 175.0     | 237.0     | 251.0     | 252.3     | 274.7     |
| Plant Pathology  | BS     | 7.0       | 11.0      | 6.5       | 7.0       | 5.5       | 4.5       | 4.0       |
| Rural Sociology  | BS     | 19.5      | 23.0      | 15.5      | 15.5      | 7.5       | 14.0      | 23.5      |
| Soil Science   | BS     | 33.0      | 32.0      | 30.0      | 17.5      | 18.0      | 14.5      | 18.0      |
| Wildlife Ecology   | BS     | 124.5     | 105.0     | 111.0     | 110.5     | 101.0     | 91.0      | 98.0      |
| TOTAL UNDERGRADUATE ENROLLMENT AT UW-MADISON / CALS                                |        | 2169.5    | 2301.0    | 2218.0    | 2257.0    | 2252.0    | 2396.6    | 2372.0    |
| TOTAL GRADUATE ENROLLMENT AT UW-MADISON / CALS <sup>3</sup>                        |        |           |           |           |           |           | 966.0     | 926.0     |
| TOTAL ENROLLMENT AT UW-MADISON / CALS  |        |           |           |           |           |           | 3362.6    | 3298.0    |

**ENROLLMENTS IN UW-SYSTEM AGRICULTURE AND NATURAL RESOURCES PROGRAMS**

|  | Degree | Fall 2002 | Fall 2003 | Fall 2004 | Fall 2005 | Fall 2006 | Fall 2007 | Fall 2008 |
|--|--------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| <b>University of Wisconsin-Madison / School of Veterinary Medicine</b> |        |           |           |           |           |           |           |           |
| Veterinary Medicine  | DVM    | 315       | 317       | 313       | 313       | 320       | 309       | 310       |
| Comparative Biomedical Sciences Graduate Program <sup>3</sup>          | MS     | 18        | 16        | 9         | 16        | 12        | 5         | 8         |
| Comparative Biomedical Sciences Graduate Program <sup>3</sup>          | PhD    | 45        | 44        | 42        | 43        | 40        | 34        | 35        |
| TOTAL GRADUATE ENROLLMENT AT UW-MADISON / SVM                          |        | 378       | 377       | 364       | 372       | 372       | 348       | 353       |
| <b>University of Wisconsin-Platteville</b>                             |        |           |           |           |           |           |           |           |
| Agricultural Business  | BS     | 124       | 118       | 105       | 94        | 133       | 140       | 158       |
| Agricultural Education   | BS     | 67        | 62        | 48        | 41        | 42        | 45        | 40        |
| Animal Science   | BS     | 122       | 129       | 166       | 164       | 166       | 214       | 237       |
| Ornamental Horticulture  | BS     | 34        | 29        | 40        | 43        | 47        | 34        | 39        |
| Reclamation, Environment and Conservation                              | BS     | 28        | 27        | 22        | 20        | 32        | 45        | 44        |
| Soil and Crop Science  | BS     | 23        | 24        | 27        | 32        | 35        | 37        | 44        |
| TOTAL UNDERGRADUATE ENROLLMENT AT UW-PLATTEVILLE                       |        | 398       | 389       | 408       | 394       | 455       | 515       | 562       |
| <b>University of Wisconsin-River Falls</b>                             |        |           |           |           |           |           |           |           |
| Agricultural Business  | BS     | 68        | 87        | 73        | 78        | 91        | 139       | 110       |
| Agricultural Education   | BS     | 119       | 123       | 109       | 90        | 79        | 74        | 77        |
| Agricultural Engineering Technology                                    | BS     | 45        | 52        | 50        | 51        | 59        | 65        | 63        |
| Agricultural Studies   | BS     | 93        | 96        | 79        | 59        | 72        | 64        | 50        |
| Animal Science <sup>4</sup>  | BS     | 283       | 327       | 347       | 369       | 414       | 428       | 438       |
| Biotechnology  | BS     | 14        | 17        | 18        | 16        | 20        | 17        | 18        |
| Conservation   | BS     | 89        | 100       | 111       | 106       | 113       | 124       | 114       |
| Crops and Soils  | BS     | 45        | 36        | 25        | 28        | 31        | 36        | 43        |
| Dairy Science  | BS     | 96        | 113       | 122       | 128       | 132       | 143       | 137       |
| Environmental Science  | BS     | 27        | 28        | 36        | 36        | 39        | 30        | 39        |
| Food Science   | BS     | 21        | 20        | 22        | 25        | 26        | 44        | 37        |
| Geology  | BS     | 37        | 33        | 32        | 30        | 28        | 33        | 28        |
| Horticulture   | BS     | 120       | 120       | 104       | 115       | 121       | 120       | 95        |
| Land Use Planning  | BS     | 24        | 33        | 18        | 22        | 17        | 25        | 17        |
| Marketing Communications   | BS     | 33        | 27        | 34        | 32        | 34        | 34        | 31        |
| Agricultural Education (Graduate)                                      | MS     | 13        | 25        | 27        | 30        | 39        | 15        | 16        |
| TOTAL UNDERGRADUATE ENROLLMENT AT UW-RIVER FALLS                       |        | 1114      | 1212      | 1180      | 1185      | 1276      | 1376      | 1297      |
| TOTAL GRADUATE ENROLLMENT AT UW-RIVER FALLS                            |        | 13        | 25        | 27        | 30        | 39        | 15        | 16        |
| TOTAL ENROLLMENT AT UW-RIVER FALLS                                     |        | 1127      | 1237      | 1207      | 1215      | 1315      | 1391      | 1313      |

**ENROLLMENTS IN UW-SYSTEM AGRICULTURE AND NATURAL RESOURCES PROGRAMS**

|  | Degree | Fall 2002 | Fall 2003 | Fall 2004 | Fall 2005 | Fall 2006 | Fall 2007 | Fall 2008 |
|--|--------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| <b>University of Wisconsin-Stevens Point<sup>5</sup></b> |        |           |           |           |           |           |           |           |
| Forestry   | BS     | 319       | 298       | 317       | 335       | 335       | 331       | 348       |
| Resource Management                                      | BS     | 263       | 277       | 277       | 297       | 358       | 293       | 346       |
| Soil Science   | BS     | 42        | 52        | 59        | 51        | 76        | 67        | 76        |
| Water Resources  | BS     | 136       | 129       | 120       | 164       | 187       | 191       | 229       |
| Wildlife   | BS     | 285       | 300       | 305       | 391       | 452       | 411       | 437       |
| Natural Resources (graduate)                             | MS     | 45        | 46        | 39        | 46        | 46        | 57        | 51        |
| TOTAL UNDERGRADUATE ENROLLMENT AT UW-STEVENS POINT       |        | 1045      | 1056      | 1078      | 1238      | 1408      | 1293      | 1436      |
| TOTAL GRADUATE ENROLLMENT AT UW-STEVENS POINT            |        | 45        | 46        | 39        | 46        | 46        | 57        | 51        |
| TOTAL ENROLLMENT AT UW-STEVENS POINT                     |        | 1090      | 1102      | 1117      | 1284      | 1454      | 1350      | 1487      |
| <b>University of Wisconsin System / Totals</b>           |        |           |           |           |           |           |           |           |
| TOTAL UNDERGRADUATE ENROLLMENT                           |        | 4726.5    | 4958.0    | 4884.0    | 5074.0    | 5391.0    | 5580.6    | 5667.0    |
| TOTAL GRADUATE ENROLLMENT                                |        |           |           |           |           |           | 1386.0    | 1346.0    |

<sup>1</sup> Data (BACT, Biology: Biochemistry) contains information for students in both CALS and the College of Letters and Sciences.

<sup>2</sup> Joint with Journalism.

<sup>3</sup> The Comparative Biomedical Sciences Graduate Program is administered within the School of Veterinary Medicine (SVM). Data in the table represent enrollment for that program alone. In addition, SVM faculty participate in graduate programs in many other schools and colleges at the UW-Madison. The number of enrolled students, advised by SVM faculty but enrolled in those programs, are not available.

<sup>4</sup> Includes pre-veterinary students.

<sup>5</sup> These data do not include enrollments in Paper Science nor do they include graduate student enrollment in the continuing education Masters program for teachers (graduate student numbers reflect enrollments in "traditional" graduate programs).

## University of Wisconsin Extension – Cooperative Extension

The University of Wisconsin Extension – Cooperative Extension (UWEX) provides research-based education, technical assistance, and consultation to all of Wisconsin's 72 counties, and increasingly to an audience that spans beyond the state. Cooperative Extension in Wisconsin is divided into four program areas -- Agriculture and Natural Resources; Community, Natural Resource and Economic Development; Family Living; and 4-H Youth Development.

Within the Agriculture and Natural Resources (ANRE) program area, more than 80 Agents and educators serve the state's 72 counties and their citizens. These county-level staff are connected to a network of about 100 faculty and scientists with Extension-funded positions on the campuses of UW-Madison, Platteville and River Falls. County and campus staff works closely together on educational program delivery as well as the applied research that leads to new knowledge. Although the ANRE program area is not directly engaged in workforce development for K-12 and university students, programs for ag producers, consultants, multiplier groups (like crop consultants, food industry personnel, veterinarians, government agency staff, and others) are often focused on increasing professional skills and encouraging specific changes in management practices, production technology adoption, environmental protection, and other key areas. The ANRE program area is divided into working teams that focus on issues that include: dairy; fruit crops; emerging agricultural markets; grains; farm and risk management; land use and agriculture; food industry research, service and training; livestock; forage; nutrient management; fresh market and commercial vegetable crops; horticulture; and, bioenergy. County and campus Extension staffs are also closely involved in teaching within the Farm and Industry Short Course, and they get very involved in 4-H youth activities connected to agriculture.

The Extension 4-H and Youth Development program connects directly with youth in K-12 schools. 4-H is a community of young people across America who are learning leadership, citizenship and life skills. 4-H is about having fun, learning, exploring and discovering. About 50,000 Wisconsin youth are enrolled members of 4-H clubs in Wisconsin. Another 195,000 Wisconsin youth get involved in 4-H through special educational opportunities at school, in after school programs, or at neighborhood or youth centers. One important program focus of 4-H in Wisconsin and nationally is the Science, Engineering and Technology (SET) program. 4-H will address our nation's critical challenge by preparing **1 million new young people** to excel in science, engineering, and technology by 2013. Currently, 4-H Science, Engineering and Technology programs reach more than 5 million youth with hands-on learning experiences to encourage young minds and fill the pipeline of young leaders proficient in science.

## Annual Report Teams

Thanks to the efforts of the following individuals, the 2009 Annual Report was drafted for the Council's review:

### *Council Evaluation Criteria:*

Doug Wilson - CEO of Cooperative Resources International, Shawano  
Connie Seefeldt - Seefeldt Farms, Coleman; also serves on WI Rural Economic Development Board, Marinette County Board, and is a WMMB Director  
Frank Friar - DATCP "Division of Agricultural Development"  
David Gliniecki - Agriculture and Natural Resources Instructor, Wisconsin Rapids School District

### *Council Evaluation:*

Al Herrman - Manager of Wholesale Services, WI Public Service Corp., Green Bay  
Paul Dietmann - DATCP "Div of Agricultural Development"  
Bliss Nicholson - CEO of the Bruce Company, Middleton  
  
Sam Skemp - General Manager of Frontier FS Coop, Jefferson, and Board Member, Wisconsin Federation of Cooperatives

### *DPI:*

Tony Evers - State Superintendent of Public Instruction  
Sharon Wendt - Director Career and Technical Education Team, DPI  
Jeff Hicken- DPI Education Consultant/State FFA Advisor Agriculture and Natural Resources Career and Technical Education Team

### Post-Secondary (UW-System) Education:

Duane Ford & staff - Dean of the College of Business, Industry, Life Science, and Agriculture, UW-Platteville  
John Shutzke - Associate Dean and Program Director, Agriculture and Natural Resources, Extension & Outreach, College of Agricultural and Life Sciences University of Wisconsin - Madison

### Post-Secondary (WTCS) Education:

Karen Knox - President, Southwest Wisconsin Technical College District, Fennimore  
Bill Brendel - Dean of Agriculture, Apprenticeship and Technology, Western Technical College, La Crosse  
  
Randy Zogbaum - Education Director, Agriculture, Natural Resources, & Renewable Energy Wisconsin Technical College System

### Primary & Secondary Education:

Jeff Hicken - DPI Education Consultant/State FFA Advisor Agriculture and Natural Resources Career and Technical Education Team  
Greg Peyer – Superintendent of Schools, Randolph School District  
Marty Speth – AgriScience Instructor, Delavan-Darien High School  
Paul Larson - AgriScience Instructor, Freedom High School

### *Report Coordinator:*

Gary Olson – Executive Director, WI Ag. Educ. & Workforce Development Council