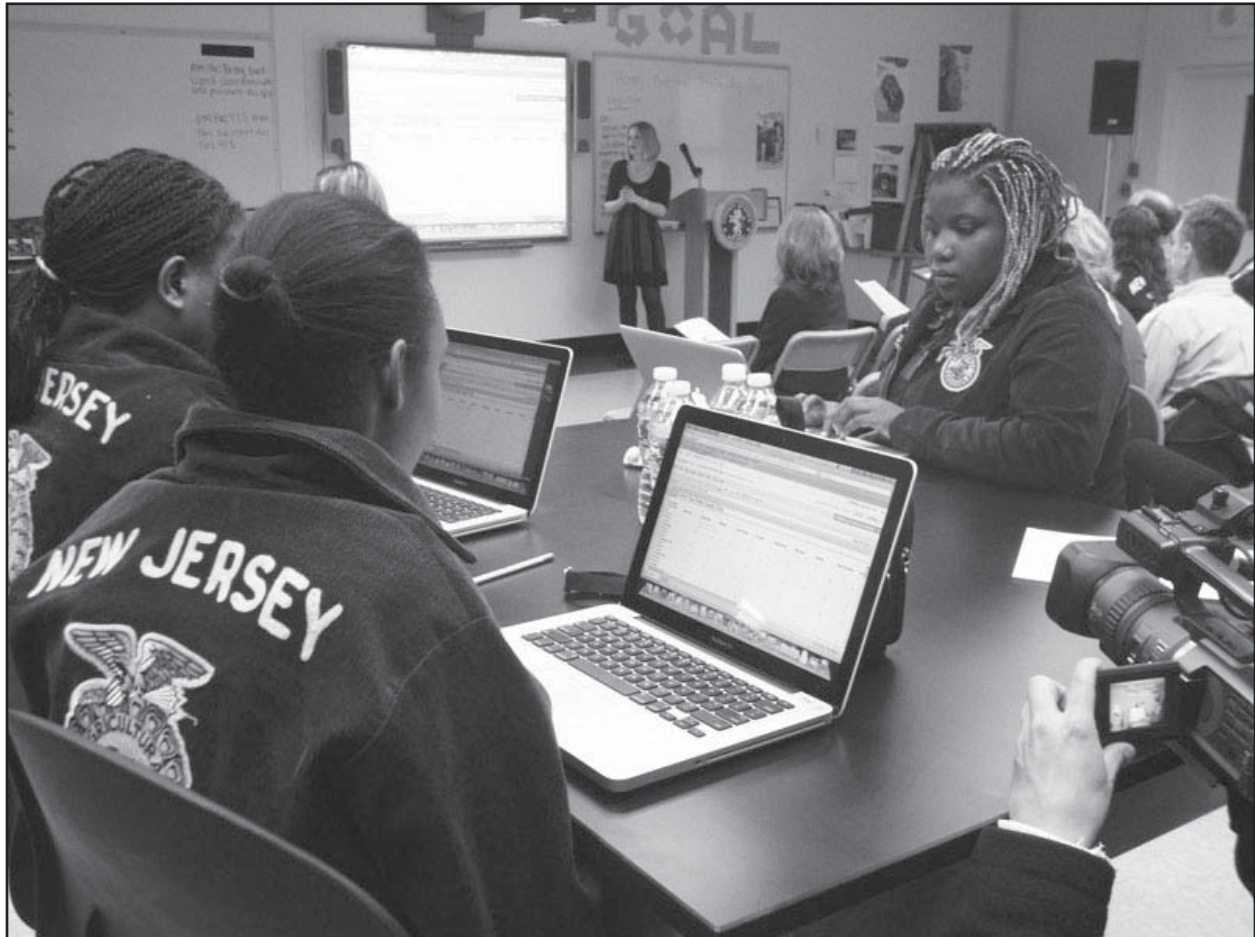


*The Agricultural*  
**EDUCATION**  
M A G A Z I N E

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Issue 2*



**KEEPING UP-TO-DATE: PROFESSIONAL  
DEVELOPMENT OPPORTUNITIES FOR  
AGRICULTURAL EDUCATION TEACHERS**

## A Lifetime of Learning

by Harry N. Boone, Jr.

In every agricultural education department we try to maximize the learning experiences available to our preservice teachers. There is, however, a limit to the education we can provide. That limit is based on a number of factors including: the time we have to prepare teachers, the number of courses they can complete in this limited time, and the experiences they bring into the program. Are we adequately preparing our students to succeed in the field? In my opinion the answer is “yes.” Once the preservice teachers enter the profession, do they need additional information, knowledge, and/or skills? The answer to that question

is also yes. One way to acquire the additional information, knowledge, and/or skills is through professional development activities.

While the need for professional development activities is greatest in the early years of one’s career, learning must be a continuous process throughout the career. It is currently estimated that the sum total of human knowledge doubles every two to three years. Assuming we could teach a student everything they needed to know about teaching during their undergraduate years, without professional development the student’s knowledge and skills would quickly become obsolete. To avoid becoming obsolete, one must commit

to a lifetime of learning.

In this issue you will learn about numerous professional development activities across the United States. Hopefully you will pick up ideas that will inspire you to “a lifetime of learning.”



Dr. Harry N. Boone, Jr., is an Associate Professor at West Virginia University and Editor of *The Agricultural Education Magazine*.

### THEME EDITOR COMMENTS

## Preparing Agricultural Educators for Global Competitiveness

by Nancy J. Trivette

Nine billion people on earth by 2050 and less land and fewer resources to feed and clothe the world’s population! How will we meet this challenge? According to the last two USDA/Purdue University studies (<http://www.ag.purdue.edu/USDA/employment/Pages/default.aspx>) on agriculture employment opportunities for college graduates, there is a growing gap between the numbers of agriculture college and university graduates and the opportunities for employment in the agriculture, food and natural resources industries. How will we feed and clothe the world tomorrow if we do not prepare people today in the science, business

and technology of agriculture by increasing the numbers of people preparing for these careers.

This is a daunting and challenging problem; however there are answers for agricultural educators and there are ways to be part of the solution.

One of the keys will be ‘keeping up-to-date through professional development’ as the theme of this issue suggests. After all, we expect our medical professionals, pilots and auto mechanics, as examples, to stay up to date on new technologies and practices by renewing licenses and certifications. It is only reasonable to expect our agricultural education professionals (those who teach young

and adult minds to research, produce, and/or market food and fiber products) to stay up-to-date and not rely on what was taught at the university 10, 15, 25 or 30+ years ago. We must expect educators to stay current with

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Nancy Trivette, the September-October Theme Editor, is the Program Leader/State FFA Advisor New Jersey Agricultural Education.

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*Teach Ag Day in one New Jersey agricultural education program. Photo courtesy of Tiffany Morey.*

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# Preparing Agricultural Educators.... (continued from page 2)

education and industry technology and learn the latest practices, gain additional certifications and/or licenses as appropriate.

The articles in this issue reflect the insight, experiences and knowledge of beginning and veteran agricultural educators at secondary, two-year and four-year institutions, as well as state and national leaders who have helped establish valuable professional development for our profession. You will read about the *Power of Professional Development* from a first year teacher who made the most of state and national opportunities with CASE and NAAE's regional conferences. You will also read about the importance of making the most of professional development conferences before you leave home, while at the conference, and when you get back home through the article *Unpacking Professional Development*. The article *Professional Development for Change* suggests that the best experiences provide improved teaching practices and suggests connecting with a network of colleagues for follow-up after the conference/workshop. Improved practices and working with a cohort will positively impact careers for the

long term. This issue also provides a look at one university's pre-service teacher education plans to utilize CASE in preparing agriculture teachers – *Integrating Science Instruction into Pre-Service Education*. *Using Industry Connections to Enhance Professional Development for Agriculture Teachers* reflects on a career long practice of making every professional association meeting 'count' for you as a professional and 'count' for your program.

Read about infusing inquiry-based instruction in agriscience education through support from DuPont and Pioneer in *Desire, Direction and Development...NATAA and NAII*. In a world where instant communications

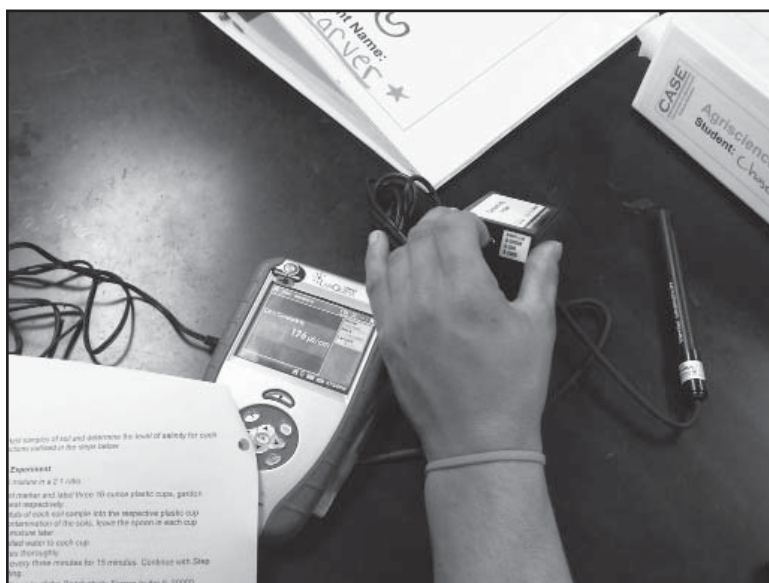
has become commonplace, *Using Electronic Resources to Expand Professional Development Experiences* is logical for agricultural educators to expand their networks and gain valuable information.

One author reflects on a turning point of her program in *CASE: Creating Curiosity through Agriculture*. Read how she used CASE and its activities, problems and projects, packed with STEM concepts in her instruction to add interest and excitement in



the classroom and in the curriculum everyday. And finally, reflections of the author in *Professional Development: The Bridge to Transport Us from Where We Are to Where We Want to Be* is about all the many opportunities and programs available to agricultural educators to improve and enhance their careers and become the educator they strive to be.

Doubling food production in the next 40 years will not just happen and it will not happen if we do not increase the numbers of students of agriculture; transform our agriculture programs to meet new needs; continue to improve pre- and in-service professional development; and think in a realm that includes progressive agricultural education programs poised to meet tomorrow's agriculture and education needs.



# The Power of Professional Development

by Tiffany Morey

The phrase “first year, worst year” is a common cliché used to define the beginning of one’s teaching career. For agricultural educators, not only are we thrown headfirst into the classroom at the beginning of year one, but unlike teachers in other subject areas, we often find ourselves completely on our own in single teacher programs. Our mentors frequently teach completely different subjects and we may find ourselves geographically isolated from another ag program. Without another agricultural education teacher to turn to when we have questions or need guidance on a daily basis, we must find other means of connecting. Professional development is an excellent way to form such connections and can serve as a lifeline for those of us who are new to the profession.

I recently completed my first year of teaching as a single ag teacher in a school that was located over an hour away from other agricultural education programs in my state. To solve my problem of being so isolated, I

looked to professional development as my main source of staying connected to other ag teachers and getting the help I needed to succeed as a new teacher. Many opportunities for professional development came my way during the course of the year and I tried to attend as many as possible.

I started taking advantage of professional development before I ever set foot in the classroom. In the summer of 2010, I was lucky enough to be awarded a scholarship from NAAE to attend a CASE institute. A week after I signed my contract with my district, I found myself on a plane bound for Carthage, Missouri to get trained in the CASE AFNR curriculum.

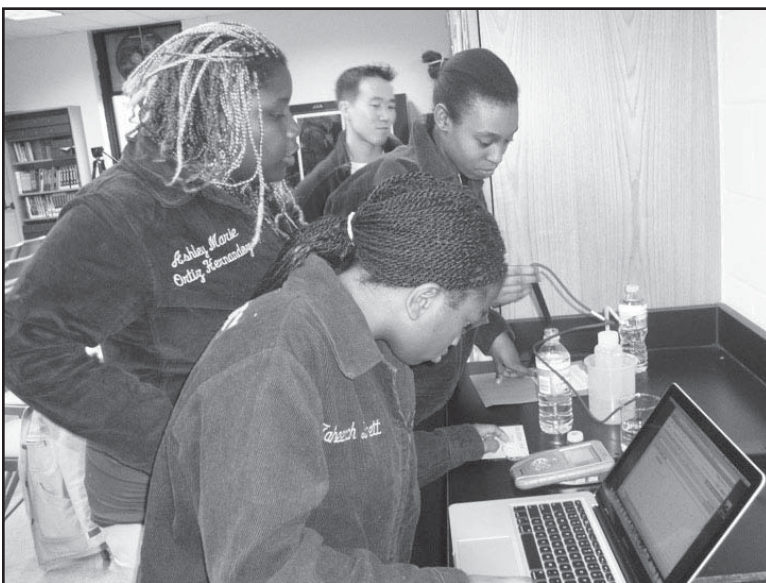
The CASE training was intense, but my experiences there were invaluable. Not only did I meet ag teachers from all over the country, but I also got to know the CASE staff and curriculum developers. During the ten-day institute, teachers assumed the role of students and worked side by side to master the curriculum. Under the guidance of the lead teachers, we learned how to teach each lesson as well as how to properly conduct the

activities, problems, project, and laboratory experiments. We got to know each other quite well, and formed a bond since we were part of a select group who would be field-testing the pilot

AFNR course during the upcoming school year. The professional connections I made during CASE would prove to be helpful later on down the road when I had questions about how to teach certain AFNR lessons, wanted to compare notes on how things were going, or if I just needed a friendly ear and advice from more experienced teachers.

The CASE institute also helped me in many other ways. I came into my first year of teaching armed and ready with an instructional plan. My students come from an urban background and most of them have little to no knowledge about agriculture. Instead of struggling to develop lessons to make agricultural education both enjoyable and relevant for them, I just had to look at my AFNR curriculum CD. AFNR laid out the logical framework for how to introduce the many topics that comprise agricultural education to my students and led them through each unit with activities that were both hands-on and fun. The curriculum was a hit with my students and increased the numbers in my program since it led more students to choose to take my class. CASE was so successful that my district has decided to send me to the training for Plant Science this summer and we will be implementing both curriculums during the upcoming school year.

In addition, having each day’s lessons laid out for me ahead of time made me better able to focus on important things like developing good classroom management practices, keeping my classroom organized, and developing grading and lesson plan writing routines from the start of the school-year. I was also able to spend more time improving the school’s FFA chapter and used many of the





AFNR activities to help prepare students for various CDEs. Without having CASE in my toolbox of instructional strategies my first year never would have gone as smoothly as it did.

I also made it a point to attend as many other agricultural education conferences and events as possible. New Jersey has a fall conference for its ag teachers each year, and that served as a great way to get to know my fellow ag teachers in my state. Having never gone through an agricultural education program or been involved with FFA when I was in high school, this was my first time meeting many of the other teachers. I was able to exchange contact information with several master teachers, and began to call on them when I had questions. Even though I wasn't geographically close to them, I was able to rely on these ag educators as mentors and confidants and they gave me the advice and confidence that I needed to succeed as a new teacher.

This past June, I attended the annual NAAE Region VI conference.

Titled *Region VI In The Sticks*, the conference was held in upstate New York at FFA Camp Oswegatchie. This conference was an absolute blast and I had the opportunity to meet other ag teachers from all over my region. There were several other young ag teachers there as well, and it was great to be able to share stories about our experiences as new teachers. The workshops were fantastic, and I got many great ideas for new lessons that I can use to supplement and enhance both of the CASE curriculums. I was sent home with a ton of great materials and supplies to teach the activities from each workshop, and formed

new friendships with ag teachers from all over my region. I also got to serve on several committees as a representative for my state. It was really neat to see how NAAE is run and to be a part of the changes being made in my region. I would highly recommend attending your NAAE regional conference if you can make it happen!

You might wonder how I was able to attend all of these professional development events. The answer: I incorporated all of them into my professional development plan for the year. Most districts require teachers to complete a certain number of professional development hours every five years. They may also ask you to complete a professional development plan each year where you specify things you would like to improve in your teaching via professional development and the types of events you could attend to make this happen. It is very easy to incorporate ag teacher conferences into your professional development plan and you

can also get your district to fund your attendance by including them. Many districts will also grant professional development days to attend events outside of the district and they do not count as absences. You may also be able to get your district to approve things like state FFA degree judging, meetings with your state department of agricultural education, and program re-approval or re-structuring sessions as professional development as well. While we as ag teachers may look at these things as just another part of the profession, we are often able use them to our benefit as professional development hours.

Conferences are not the only source of professional development available to ag teachers. Many districts also hold their own professional development sessions that ag teachers have the option to attend. While the topics presented may not cater specifically to agricultural education, they can prove to be helpful in other ways. I found the sessions on technology to be especially helpful and used what I learned to enhance the CASE curriculum and create other fun projects for my students. These sessions also count as professional development hours and are a great way for teachers with busy schedules who may not be able to travel to conferences to get the hours they need. In addition, they serve as great ways to get to know the other teachers in your building and

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# CASE: Creating Curiosity through Agriculture

by Kristina Haug

**Y**ou can teach a student a lesson for a day; but if you can teach him to learn by creating curiosity, he will continue the learning process as long as he lives. Clay P. Bedford

The process of teaching relevance to students and the desire to be life-long learners remains strong in the hearts of good educators. Often times, there exists a void between what we know students should be able to demonstrate and the written words on the lesson plan. When reviewing the last two years of my experience advocating for meaningfulness in instruction and the Curriculum for Agricultural Science Education (CASE), two realizations come to mind. First, agricultural education within the high school environment is becoming heavily looked upon by administrators as a way to bring relative meaning to core academic content that often seems to be a vast wilderness to so many students. Secondly, by incorporating CASE and its associated professional development component into my Agricultural Science

and Technology program students not only gain valuable science, technology, engineering and mathematics (STEM) concepts they also take on a new perspective of how to approach and solve problems in everyday life. Traversing from the CASE Institute to the classroom, the impact CASE has had on both my students as well as myself has proven itself within one year's time.

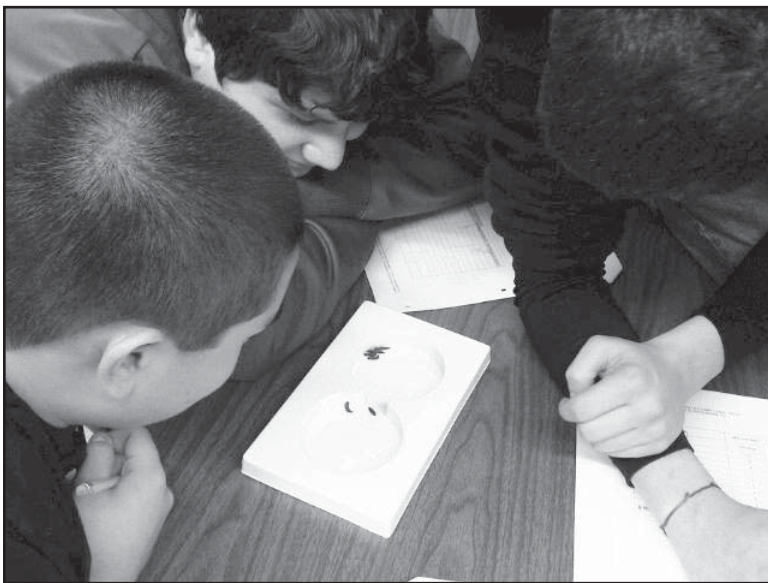
Let's rewind quickly to spring 2010. The Glide High School Agricultural Science and Technology (AST) greenhouse was built two months ago and students are already producing some phenomenal hanging baskets. In fact, it takes a good portion of class time in both my Agriculture 1 and Agriculture 2 classes to remove spent blooms and water containers every other day. Despite traditional greenhouse management lessons and labs, students are getting bored with the monotonous maintenance that seems to have no end. After school one day, as I am trying to finish reorganizing the interlocking petunias, ideas of how to make time spent in the greenhouse more meaningful and relevant to students are reeling through

my mind. I know it's time to increase buy-in before I start losing student interest. How can I shift gears from the common student questions of 'How and Why' into the exciting 'Why's and

What ifs?' Lessons thus far have had Science and Math connections, but lacked the relevance and inquiry to make students start thinking on their feet. The time has come to restructure.

With the CASE Plant Institute coming this summer, I know it is necessary to take my greenhouse instruction to the next level. Three phone calls, twelve e-mails and four months later, I became one of 18 CASE Plant Science students sitting in Strand Hall at Oregon State University ready to learn about this 'new curriculum.' What I didn't know; however, is how my outlook on STEM integration, assessment, certification and the professional development CASE offers for teachers across classes would change over the next two weeks. My laptop was open and outlook ready for what promises to be a great restructuring of my current methods and lessons for students. Let the CASE Professional Development begin...

Following the welcome speeches and logistics discussions, we immediately began to perform the procedures students undergo by setting up our reference binders and preparing for upcoming lessons. Rigor was enforced from the gate and we would soon find out how to encapsulate 175 days of materials in two weeks. Within each lesson we found links to SAE, FFA and Life Knowledge components that provided the groundwork for several Career Development Events. All lessons were tied to Agriculture, Food and Natural Resources, National Science Education, Mathematics and English Standards uncovering basic concepts on a day to day schedule based upon a 175 day school year. Throughout the next two weeks we completed approximately thirty labs and reviewed nu-



merous ways to customize the labs to individual specifications. At the end of the CASE training, I had completed syllabi for the upcoming year and was prepared to use our High School Perkins allotment to purchase a classroom set of materials. The coming school year was certainly going to be exciting.

Within the AST program at Glide High School, the CASE Plant curriculum became the Agriculture 2 focus



for sophomores as part of a Scope and Sequence which would eventually include the CASE, AFNR and Animal Science courses. Following the first two days of school and classroom procedures teacher-led instruction was out the window and student-directed instruction was in full swing. From the third day forward activities, projects, and problems (APPs) played out both in and outside of the classroom. Soon students were using the Vernier LabQuests, with its many probes, to explore numerous basics of soils. Their relationship with these useful tools became one of great intrigue, with soil formation and organic matter as topics within the first several lessons. Students worked cooperatively to conduct laboratory inquiries

that spanned higher order thinking skills by focusing on approaches with semi-structure such as activities to no structure such as problems.

Throughout the school year the APPs provided great organization to the uniqueness of the CASE curriculum and the strength of the labs. Student-directed instruction also thrived through the utilization of the LabQuests and its probes. Because this curriculum is science-oriented and

chalked full of technology, students were able to measure CO<sub>2</sub> levels, temperature and light spectrums just like professionals within various agricultural fields. Visual representations allowed students to immediately relate to science and mathematics concepts occurring before their very eyes. This sparked critical thinking on several levels. Often students would have further questions beyond the parameters of the lesson which would lead to new experiments and applications. Without a doubt, the scientific component of CASE compares with what students are learning in standalone science classes, given the medium of practical applications. In fact, the context in which each APP is set up provides a greater level of understanding based upon students tying learning to everyday living.

As educators, we should always examine what it is we are wanting

students to take in and remember next year versus memorize for a final. Life lessons of a sort. Proper pedagogy. Speaking for myself, I can look at a lesson and think, “*That’s really cool! I want to teach that in class, but where do I ‘throw’ it in and how do I make it more than a high energy stage act with a senseless plot? Are students going to be able to relate this to their lives now and/or in the future?*” With CASE in the classroom students were provided important background information to maximize their ability to make these long-lasting connections. Labs provided students with elevated discoveries while accomplishing their purposes, open-ended in a sense. Ample room to explore made their experiments more creative and interesting both on a teacher and student level.

Student understanding and achievement were now ‘proven on paper’ for administration and the strength of academic concepts were easily seen in student learning. The Critical Thinking and Application Extensions were deemed very successful for students with various learning styles. Individualized instruction led to several students creating their own business protocols for ornamental flowers based upon greenhouse environmental factors and thus a true association to business management. Ideas for using the equipment and building upon their investigations were collected every quarter, lead-

*continued on page 16*



*Kristina M. Haug is a graduate student at the University of Missouri.*



# Professional Development for Change

by Dan Jansen & Marlene Mensch

Many secondary agriculture instructors anticipate the beginning of summer break with optimism about how to improve themselves for the next school year. Each summer is a time to set goals for improvement in one or more areas of our professional repertoire with the caveat that the following fall will reward us with improving our ability to engage students or reduce stress. Of course, summer professional goals vary greatly regarding purpose and outcomes based on the individual, but the one constant is finding the right professional development to support change.

Change is the optimal word when discussing professional development of any kind. If we are unwilling to accept changes in our practice or the professional development does not move us to change our old habits, then essentially time is wasted. Change also does not happen very quickly or in isolation – meaning if other professionals do not share our passion and struggles with the change process we are most likely to fall back to what we feel is comfortable (Goleman, Boyatzis, & McKee, 2002).

The following will examine three important considerations about professional development and then offer some hope for change.

## Individual Teacher Willingness to Accept Change

The new professional must be up to date with latest educational reforms and be proficient at modifying and extending their teaching practice to meet differentiated student populations of classrooms, and embrace new technology (Fullan, 2001). The first step is to identify that change in our teaching practice is necessary. This

revelation, whether it be a product of our own dissatisfaction of current practice or local school leadership mandate, is important to motivate a teacher for the work ahead of them. Regardless of what drives the need for

and the evaluation of programs from student assessments. The teacher is forced to implement change with few resources (including time as mentioned previously) at their disposal for the expectations placed on them.

Change is the optimal word when discussing professional development of any kind.

change, if we are at a point personally to accept change it is then, and only then, that professional development opportunities are effective. Intrinsic change for a teacher is the most comfortable. The proverbial day of reckoning is when the teacher determines that the “old way” seems to fall short of personal expectations. Intrinsic change is comfortable because it is the individual’s decision to seek out a better way of teaching. However, like with any type of change, it requires time. Time concerns arise as a major deterrent of adopting a new way of doing things (Enochs, Jansen, & Thompson, 2005). A side effect of teaching agriculture is the lack of time available to plan and implement large-scale professional change.

The other alternative providing motivation for change in education is mandates from superiors. The sad unspoken truth about standards-based curriculum and common assessment of programs is that in many Career and Technical Education disciplines there is little to no consideration related to teacher resources and professional development. Many states seem to run out of resources after implementing a system to impose standards for agriculture programs

Regardless of the circumstances initiating change, the responsibility of change first lies with the individual (Guskey, 2000). However, a good professional development system removes the isolation of the individual, is time efficient, and provides the necessary support for change to happen. We will examine those qualities further.

## Effective Professional Development and Resources

Change is difficult enough, but anxiety that accompanies change increases if professional development is disconnected from context or conducted in isolation (Guskey, 1994). Most classroom teachers can relate to the notion of ineffective professional development. If you do not think this relates to you, I challenge you to look at the binders sitting on the shelf or the desk drawer filled with “curriculum” CDs. We all have those dusty binders and unopened CD cases. Those represent the time we sat and listened to someone sharing ideas to help us or the money spent on commercial products to incorporate into our daily instruction. Unfortunately, even with the best intentions for summer break to retool our practice, time

slips away and we fall back to our old approaches.

This concern seems to be more related to the quality of professional development than time. Yes, time is always a concern, but agricultural educators do adopt innovations when practical and relevant. The key to assist change and lessen the anxiety is all about the design of the professional development. Two important design elements for quality professional development include learning from an expert and modeling and practice.

### Learning from an Expert

Apprenticeships, teachers teaching teachers, coaching, and peer teaching are all ways to describe the event of learning from an expert. This is the time-honored transfer of knowledge that predates Dewey and proves to be the most effective method not only to pass on skills and knowledge but also establish culture and confidence during the change. Teachers learn many exemplary teaching strategies from each other, change personal philosophies about teaching, and develop professional networks (Borko, 2004). The expert teacher has a specialization to pass on related to technique or skill. However, effective teachers of teachers transfer concepts, model skills, and practice alongside learners in a team or partnership atmosphere (Showers, 1985). This process happens as a dialog among peers to learn about the unique challenges related to implementing change in the participant's situation and fosters a community bounded by interest in similar content.

### Modeling and Practice

Modeling and practice are two under used approaches for professional development. One could reasonably suggest the cause for the dust on the binders of materials is a result of the teacher receiving lit-

tle to no professional development specifically targeting the effective implementation of the resource. It is critical for professional development facilitators, the teachers of teachers, to model proper use of every aspect of the instructional materials in order to ensure no assumptions or misconceptions are left in question. Learning by doing, part of our FFA motto, is a must not only for our students but also for our teachers. Practice is important to solidify proper use of new ideas in professional development. Practice provides clear interpretation of procedures and provides opportunities for feedback before the teacher is faced with implementing the materials on their own (Guskey, 2002). If teachers are handed materials without demonstrating their understanding of how to utilize the materials, the result is underutilization or worse. Effective professional development should not assume teachers will find the time later to practice. The time to practice is during the professional development. Therefore, professional development for change must be an extensive and a thorough process rather than brief event (Loucks-Horsley et al., 1987). This intensive training will relate the experiences of the professional development directly to day-to-day operations in the classrooms. Practical application is what teachers want from professional development (Fullan & Miles, 1992).

### **Professional Development Environment and Continued Support for Change**

Change of teaching practice requires a change of how we operate and think as practitioners. This holds true about how we approach choosing the appropriate professional development. Fullan (2001), is quoted saying "professional development is not about workshops and courses; rather, it is at its heart the development of habits of learning that are far more

likely to be powerful if they present themselves day after day." This implies a potential change of culture for a teacher, and such an environment requires a strong support network to help maintain change after the initial instruction.

Often agricultural educators work in isolation. Some may have opportunities to collaborate with other teachers, but many times, it is with teachers from a different discipline. "Professional learning communities require that teachers establish a common, concise set of essential curricular standards and teach to them on a roughly common schedule" (Schmoker, 2006). This is a difficult requirement for most agricultural teachers within their own school. However, with the development of a professional cohort of teachers who are teaching the same concepts on roughly the same schedule, significant support and collaboration can occur. This creation of a community can exist across state borders 24 hours a day with the use of modern technology and social media.

Because of the diversity of subject matter in agricultural education, we must reach out beyond our individual silos for continued support. A professional learning community that evolves from a professional development session can remain in place upon returning home. This sense of support not only provides teachers with a safety net and sounding board for the day-to-day challenges of change, but also establishes an accountability element to ensure efforts from the initial training are not lost. The result is positive change supported by a network of educators that share common goals and challenges.

### **In Closing**

What is needed is effective and efficient professional development.

The kind of professional development that is career changing and provides us with the tools and support system to facilitate long lasting change. Change, whether self-induced or mandated, will not happen without resources and professional support networks. The modern agriculture teacher has an enormous and potentially unrealistic time burden and expectations for learning new instructional strategies in an effort to create a seamless curriculum that meets accountability measures. The emphasis for choosing the right professional development should be based on 1) exposure to actual practice rather than descriptions and 2) opportunities for group support and collaboration (DuFour, DuFour, Eaker, & Karhanek, 2004).

The National Council for Agricultural Education identified the need to help agricultural educators meet the professional development challenges of our changing profession. In 2006, the introduction of Curriculum for Agricultural Science Education (CASE) became the vehicle to combine the necessary resources and materials of best teaching practices with the most effective approaches for professional development. The result is professional change that is promoted and supported for our practicing agricultural educators. CASE provides rigorous specific content instruction utilizing the best teachers teaching teachers during CASE Institutes. The CASE system fosters the collaboration of professional learning communities and provides the needed support for change.

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# *Using Industry Connections to Enhance Professional Development for Agriculture Teachers*

by Jan-Marie Traynor

It is widely recognized that teachers of agriculture – especially new teachers – benefit from professional development opportunities. This is not to say that teachers of agriculture are any less prepared than teachers of any other subject but an acknowledgement of the complexity of the position. Studies have identified issues which contribute to early career difficulties for teachers of agriculture including student discipline, isolation, responsibilities such as advising FFA, lab safety concerns, and classroom management were just a few identified by Talbert, Camp, and Camp (1994). Other studies have identified that, while the issues may be different when comparing traditionally certified teachers to alternatively certified teachers or experienced teachers to new teachers, all benefit from professional development (Grady & Dyer, 1994). I believe that traditional professional development opportunities do not go nearly far enough. I was a traditionally certified teacher of agriculture and started my first teaching job right after graduation. I think that a closer look at my career will illustrate the benefits of a supplement to traditional professional development.

I still vividly remember that first day as a teacher of agriculture. I felt so prepared - after all I had been an excellent (straight “A”) student in college and had been mentored through a wonderful student teaching experience by one of our best and most experienced teachers. There was even that week of student teaching when, because my lead teacher had a family emergency, I was left in charge of the classes all by myself.

There were no major disasters, and the classes all seemed exceptionally well behaved and attentive to my lessons. I was even hired for my first teaching position (Horticulture Instructor in a county shared-time high school) before graduation – which in my mind indicated some measure of confidence by the administration in my abilities – how naïve of me.

I spent weeks before classes making sure my classroom was perfect, the greenhouse was clean, and all supplies were delivered. My lesson plans were perfect and all was in place as I welcomed my first class. Imagine my dismay when, a few minutes into roll call, I hear a prediction of “she won’t make it till Christmas” from the back row! Since then I have enjoyed 34 Christmases as a teacher of agriculture.

I will be the first to admit that I was not, at least in that day, your typical ag teacher. I did not grow up on a farm, I was from the suburbs, not a rural area, I had never been an FFA member (or 4-H either) – all I knew about being a teacher of agriculture I had learned in my college classes. If I’d realized just how poorly prepared I was I would have left by day 2. Fortunately New Jersey had (and still has) a great support system as well as an active agriculture teachers association. There were plenty of professional development opportunities and I attended every workshop and seminar offered. I quickly learned about the value of FFA and SAE, lesson plans, and an assortment of student learning activities. But it was in working with my advisory committee that I learned the most – and received what was perhaps the best advice. At my very first advisory committee

meeting a local landscape architect who was also an active member and officer in our New Jersey Nursery and Landscape Association recommended that I attend their next North Metro Chapter Meeting. I walked into that first meeting and was warmly welcomed by an entire room of professional landscapers, horticulturists, and nurserymen. Thirty plus years ago it was not so common to have a woman teaching agriculture and even rarer to have a woman attend one of their meetings. While I don’t remember the topic I do remember thinking that I needed to keep coming because this was stuff I had to learn.

I became a regular at every professional horticulture association meeting within a reasonable drive of my home. A few times a year one group or another would ask me to be the speaker for a meeting. I made wonderful friends among these industry leaders. They would serve on my advisory committees, speak to my classes, and mentor my students; but there was something more at work here than just a teacher sitting in on industry seminars. The professional development I received was not restricted to the formal program, in what a speaker may have said or in the slides they presented. For me some of the best professional development took place during the networking sessions before and after the meeting. It was during these times that the growers would share their concerns about the weather or the latest pest to attack their crop, the landscape professionals would talk about how they managed their crews, the garden center owners would talk about pricing and product selection. I was nothing more than a fly on the wall – or maybe a sponge is a better descriptor. I took in

all they said, often jotting notes later. In the classroom the next day I would share with my students all I had heard and learned. My students have come to expect these after-meeting briefings which often become the focus of a class discussion on current issues.

I am sure that for many, all of this sounds pretty ordinary. Teacher attends professional meetings, learns something, shares with students. What was happening went a lot deeper than just a sharing of information. When I made time to attend these meetings, I was modeling professional behavior for my students in a very personal way. They knew that when they went home at the end of the day I was often going to yet another meeting. I believe it explains why a very high percentage of my graduates become active members of professional associations both at the state and national level. Every professional horticulture-related association in New Jersey has had one of our graduates serve as President at some time in the past 10 years. By my participation I told my students that there was a value attached to these associations and they were more willing to join and get involved as a result.

In addition I believe that, over the years, my students have had a higher degree of respect for me because they knew that I worked so closely with and was accepted by the industry leaders. This was especially important 30 years ago when young men would sign up for the landscape program and not understand how a woman could possibly teach them anything. Even today I believe it affirms for my students that what they learn in my classes are skills and a knowledge base that will help them succeed in the real world.

Perhaps more than any other teachers, those who teach in career areas and especially agriculture teach-

ers have a difficult job. They must be skilled teachers, able to understand learning styles, employ instructional technology, and be skilled at student management and motivation. But they must also be good landscapers, growers, florists, ranchers, farmers, soil scientists, and more. When most teachers of agriculture grew up on a farm or at least working in agriculture that portion of the job was easier – they had the technical skills and could focus on the pedagogy. Many young teachers today are very much like I was – a kid from suburbia who was drawn to agriculture teaching.

We have all heard the statistics on how many farms we are losing – which means that it will not be easier to get farm kids to join the teaching ranks - which leaves us with the task of recruiting teachers of agriculture from any and all sources. Many of these new teachers will lack the hands on skill sets and professional industry knowledge so important to success. The projected national shortage of teachers of agriculture makes the situation even more critical. Professional associations within your state or region may be the best path to helping teachers improve their skill set and knowledge base. There are associations for virtually every aspect of agriculture. Looking first to your state association will likely present the easiest opportunity to get to know professionals and to give them a chance to get to know you. I was always honest about what I knew and didn't know. I found the professionals appreciated the respect I showed to them and also appreciated that I believe in the value of hands on learning.

We will all benefit if we work to develop closer partnerships and alliances with the professional associations representing the occupations we prepare our students to enter. Think about the encouragement being ap-

plied through Perkins legislation to develop programs of study (POS) in order to facilitate the smooth transition from secondary to postsecondary educational institutions. Add to that the involvement of the professional associations and we can complete the cycle from education to career. Closer relationships between teachers of agriculture and professional associations can provide opportunities for the teacher to develop better skills and a broader knowledge base, mentors for students, a meaningful example of citizenship, and an enhanced educational environment for students.

If you are unsure about where to start, try a simple Internet search to see what associations are found within your state. Your Department of Agriculture may also be able to help – check out their webpage which may list ag-related professional associations. Contact the association's Executive Director to introduce yourself. Join the association – most have a category of membership which is less expensive for educators. This is money well spent. Most associations rely heavily on membership dues so this shows them you are serious about getting involved. Your own advisory committee members may also be a good entry to an association. I realize that with everything else the typical teacher of agriculture (is there really

*continued on page 16*



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# Integrating Science Instruction into Pre-Service Teacher Education

by Jonathan Ulmer and Phillip Witt

In a recent speech to the American Association for Agricultural Education, Dr. Kirby Barrick clarified a recommendation from *Understanding Agriculture: New Directions for Education* (1988). Dr. Barrick stated, we were not to teach agriculture as a science, but to



emphasize the science in agriculture. Organizations like the American Association for the Advancement of Sciences recommend schools should be connecting what students are learning in the classroom to the working world (American Association for Advancement of Science, 1993). Programs like agricultural education have an avenue to complete that connection. The Carl D. Perkins Education Act (109<sup>th</sup> U.S. Congress, 2006) directs career and technical programs to teach students with content that aligns with core academic standards. In agricultural education, the connections to science and mathematics are strong. Perkins specifically calls for “competency-based applied learn-

ing that contributes to the academic knowledge, higher-order reasoning and problem-solving skills” (p 4). Thompson (2001) found that administrators’ perceptions of increasing science knowledge through integration in agriculture are positive. Over 76% of principals surveyed thought that students would have a better understanding

of science if the science was integrated into agriculture instruction. Additionally, over 70% thought that students would be better prepared in science if they were to complete an integrated classroom. Science teachers had similar results, over 63% agree that students would have a better understanding of science if they were to complete a science integrated agriculture classroom (Warnick, Thompson, & Gummer, 2004).

Teachers across the country have taken countless credit hours of class that were scientific in nature, whether they were agriculture or core courses. But how do we emphasize the science in the high school agriculture classroom? Many models of content integration have been explored, some teachers rely on their knowledge from college, some cooperate with the biology teachers, and others teach agriculture and let the science

speak for itself. Content integration has been around in some programs for many years. Medicine Valley High School in Curtis, Nebraska was working to highlight the science in the agriculture in the late 1990s with activities like electrophoresis and tissue culturing.

Recently an increasing number of states are recognizing the value of agriculture as a science. New policy in Texas allows specific advanced agriculture classes to be credited for one of the four required courses in science or mathematics. The most recent development on content integration from the National Council for Agricultural Education is the Curriculum for Agricultural Science Education (CASE).

The goals of CASE are widespread, but its primary objective is improving student performance in math and science by creating a context for student learning through agricultural education courses. Those at CASE strive to ensure quality teaching by providing extensive training for teachers who choose to use the curriculum in their program. The CASE Institute is the professional development component of CASE that provides 80 hours of instruction for each of the courses that have been developed. This component is required of all teachers to provide teachers important background related to the pedagogy used in the CASE curricula and the opportunity to practice various lessons in preparation for classroom instruction (CASE, 2010).

A recent study conducted in conjunction with Texas Tech University and Oregon State University explored the professional development compo-

ment of CASE. Requiring teachers to commit two weeks in the summer before they can use the curriculum is a huge commitment and might prevent many teachers who are interested from attending. Researchers wanted to know what impact the institute might be having on the teachers.

The purpose of this study was to discover if the science teaching efficacy belief of teachers changed after completing a CASE Institute. Beliefs are part of the foundation upon which behaviors are based and studies investigating teacher efficacy indicate that these beliefs may account for differences in teacher effectiveness (Enochs & Riggs, 1990). A teacher's efficacy belief is a judgment of his or her capabilities to bring about desired outcomes such as student achievement, motivation, and student engagement (Tschannen-Moran & Hoy, 2001).

The study explored the science teaching efficacy belief of agricultural education teachers before and after they participated in a CASE institute in order to determine what impact it might have on science teaching efficacy.

Researchers found that the CASE Institutes and the CASE curriculum are making a positive impact on agricultural science teachers and the courses they offer. They believe that the professional development requirement is a critical component of the CASE model because it provides teachers, regardless of the number of years they have been teaching, with the confidence they need to implement rigorous science and math content into their courses. Teachers also told the researchers they are implementing CASE curriculum into their classrooms because they, and their administrators, see the value of enrolling in the course.

CASE is one solution to the need for highly qualified and motivated teachers in agricultural education. Recent trends in education have required more and more agricultural education programs to demonstrate how they are contributing to the overall performance of students in core curriculum areas. The CASE curriculum is an option that teachers have to establish themselves as a critical component in the education system. Through CASE, teachers can create, for many students, a link between difficult concepts and a real world context for learning.

Universities are looking at their pre-service teaching programs and asking, how do we prepare our students to teach integrated science in their agriculture classes? Pre-service teacher education continues to change on an annual basis with a strong foundation in theory. Changes include the evolution of agriculture content, new findings in the learning process, new policies, programs, and recently content integration. CASE might just be the answer at the collegiate level also.

With the policy that Texas state institutions reduce their undergraduate programs to 120 credit hours came some tough issues about teaching the students enough content to be successful. One of the results of this policy at Texas Tech University was the ability to count some agriculture classes as the core science that they are. As a result, students are allowed to take agricultural science electives. Recognizing agriculture for science has opened up some additional opportunities. The Department of Agricultural Education and Communications is proposing the addition of a course on the integration of science into agricultural education.

The new course will be based on the CASE Institutes, or the summer professional development for

agriculture teachers who are adopting the curriculum. The challenge with turning the CASE Institute into a pre-service course, is time. The CASE curriculum includes a large number of activities, projects, and problems, several in the form of lab experiments. The resulting course will have a strong emphasis on laboratory instruction. For Texas Tech Ag Ed, this will be the first course outside of agricultural mechanics that will have such a strong emphasis on the laboratory. To complement the ag mechanics classes, part of the integration course will be instruction on the management of a laboratory. Similar to the CASE Institute, students will participate in most of the activities, projects and problems that they would be teaching to their students with the program.

It is the hope of the department that even if the students do not teach in a school that adopts the CASE program, they will still understand the challenges and opportunities in the integration of science. Additionally, Texas Tech graduates will earn their CASE certification as well as a stronger foundation of inquiry based learning that is the foundation of agricultural education.

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## CASE: Creating Curiosity.... (continued from page 8)

ing to many great applications and Supervised Agricultural Experiences projected for the coming year.

As the most versatile toolbox in our program, the CASE Institute and curriculum definitely provides for program strength and necessity as budgets grow tighter, core requirements stricter and elective programs are being closed across the country. Students now have the opportunity for CASE certification and, ultimate-

ly, college credit through completion of articulated instruction in plant science and horticulture courses at several Oregon Community Colleges. At Glide High School, there is a projected plan to implement CASE; Introduction to Agriculture, Food and Natural Resources, Principles of Agricultural Science-Animal, Animal and Plant Biotechnology and Food Science and Safety courses into the local program of

study providing the highest quality of agricultural education available to students nationwide. I feel that CASE has become a huge asset to our program, as well as to all Agricultural programs across the United States! Just as Clay Bedford insists upon sparking curiosity in students, CASE and its professional development aspect provides exactly that, along with an intrinsic desire for discovery and the quest for life-long learning.

## Using Industry Connections.... (continued from page 13)

such a thing?) has to do it may seem as though there is not enough time to add involvement with professional associations. I can only tell you that for me the rewards have been well worth the effort and I am a better teacher as a result of my involvement with industry professionals. Involvement with industry associations did not replace my involvement with education

related associations such as NAAE – it supplemented and complemented the traditional Teacher In-service professional development activities.

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# *Desire, Direction, and Development...*

## *NATAA and NAII*

by Brian E. Myers and Donna Parker

Few in agricultural education would argue the importance of professional development in the improvement of our practice as educators. However, few of us ever get the opportunity to participate in, let alone provide leadership to, a professional development

opportunity that immerses participants in inquiry-based teaching techniques. The high-intensity format has shown to increase active teacher participation and learning. Upon completion of the training, teachers are then referred to as Ambassadors for Agriscience. These ambassadors provide workshops within their states and regions, and lead professional

DuPont to more clearly understand career opportunities in all fields of science and to introduce DuPont staff to the NATAA program.

4. Provide interactive classrooms for teacher instruction at the National FFA Convention Career Show and the NAAE National Convention Expo.
5. Provide teachers with educational resources, training and information on ways to implement science-based activities in their agriculture classrooms.
6. Share lesson plans, laboratory exercises and teaching strategies between ambassadors in order to improve the resources available for teaching agriscience.

Successful professional development must involve many partners all working together toward a common goal.

experience that has proven to have a dramatic impact on teachers and the students they teach. The National Agriscience Teacher Ambassador Academy (NATAA) and the National Agriscience Integration Institute (NAII) are two such examples.

The focus of NATAA and NAII is not on changing what agriscience teachers teach, but HOW they teach. In that effort to better prepare agriscience teachers to utilize inquiry-based instructional methods when incorporating science curriculum into agriculture classes, the National Agriscience Teacher Ambassador Academy (NATAA) was established. NATAA has a strong focus in inquiry-based instruction in its training, under the idea that classrooms that utilize inquiry-based instruction can potentially improve student understanding of science curricula in the agriscience classroom. Currently, NATAA is an intensive week-long professional de-

velopment at the Agriscience Institute, provided for agriculture teachers at National FFA Convention, and the National Association of Agriculture Educators Conference, both held annually. The NATAA is guided by these six objectives:

1. Increase interest in agriscience based educational activities in agricultural education programs through the training of, and workshop presentations by, ambassadors.
2. Identify and select agriscience teachers that have a passion for agriscience education, that are effective presenters, that engage students in science based activities, and understand the total program concept for participation in the program.
3. Allow the ambassadors the opportunity to interact with scientists and other personnel from

As NATAA evolved it became clear the impact Agriscience Ambassadors were having within their own agricultural education programs and states. However, it became equally evident that the teachers alone could not be the only change agents working toward the goal of impacting how agriscience education is delivered to our students. In 2009, the National Agriscience Integration Institute (NAII) was born from this realization. NAII brings a state team comprised of a combination of state agricultural education and science staff, university teacher educators, and Agriscience Ambassadors together. At NAII the state teams identify the current landscape of agriscience education in their state, create a shared vision for what it should look like, and develop a working plan of action to realize that vision. Just like with NATAA, the NAII is guided by the clear purpose of impacting HOW agriscience

education is delivered, not what content is taught in the classrooms. The NAII is guided by the following objectives:

1. Describe the current situation regarding agriscience education in each state.
2. Increase awareness and build understanding of the complexities of the change process.
3. Determining each person's role as a leader/change agent.
4. Design complete professional development programs addressing all aspects – purpose, policy, program, and practice.

NATAA is sponsored by DuPont and NAII is sponsored by Pioneer, a DuPont business. The overall vision for this program came from the individuals from DuPont and it is due to their active involvement in the program that the vision has been clearly articulated from the beginning. Other partners in this program include Lab-Aids, Inc, National Association of Agricultural Educators, National FFA Organization, and National FFA Foundation. Each of these partners brings a unique and important aspect to the overall management of the program. While these organizations manage the logistics of the program, another group of individuals is brought in to guide the curriculum focus of the two events. The facilitation team includes individuals with a wide range of knowledge and experience in inquiry-based instruction, teacher professional development, and organizational development.

The program has evolved and grown since its inception. It began by sending six agriscience teachers to attend professional development with science teachers. It has now grown to where there were over 120 teachers applying to attend the week-long NA-

TAA experience designed specifically for agriscience teachers. Throughout that journey there have been many lessons learned that have been used to guide in the hopefully expansion of the program in 2012 and others can learn from them as well. The following principles have been found key:

1. Any successful educator professional development program must have a clearly stated goal. This goal must be clearly articulated by the facilitators, the participants, and the nominators.
2. Successful professional development must involve many partners all working together toward that common goal. Each partner, whether it is an organization or an individual, must be selected for what they can add to the overall leadership team.
3. Professional development has to be evolving. Constant reflection as to what is working and what is not is a must. This change must be driven by participant input and the changing educational landscape. Quality professional development prepares educators for what they will face tomorrow, not yesterday.
4. Professional development must be sustained. The research has showed us time and time again this is the case. We have seen this to be so in our own experiences as well. However, this type of professional development is expensive, both financially and in time commitment. But if, as leaders in the profession, we want to make lasting change in agricultural education it is a must.

The National Agriscience Teacher Ambassador Academy (NATAA) and National Agriscience Integration

Institute (NAII) are not perfect models of teacher professional development. However, we have seen these two events assist already outstanding educators and education leaders reach goals higher than they once imagined possible. Those of us lucky enough to be associated with this program are inspired by those that have participated and are driven by the goal to deliver the highest quality agricultural education possible to our students.



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*Donna Parker is a teacher and Co-Department Chair of the Dublin High School Science Department in Dublin, OH and is one of the facilitators for both NATAA and NAII.*

# Using Electronic Resources to Expand Professional Development Experiences

by Julie Fritsch

As budgets shrink and departmental belts tighten, it is getting harder and harder for some agriculture teachers to convince their administration to send them to off-site professional development sessions. Because of the nature of what agriculture teachers do, they need professional development that is often very specific, technical, and is not likely to be found in an after-school session or in-service day. There are state conferences and NAAE convention, but even these opportunities, while typically rich in professional development opportunities, only happen once a year.

Add to the budget issue schedules of agriculture teachers, already cram-packed with FFA activities, SAE visits, and other requirements of their challenging jobs. Even if they do manage to fit in one, or even two during the course of a year, that still leaves a lot of territory to be covered. While it would be ideal to think that teachers could attend hands-on, in depth professional development sessions tailored to their needs, the reality often lies somewhere a bit short of that.

Enter NAAE's Communities of Practice (CoP). It's an online, professional networking website that NAAE hosts and manages specifically for helping agriculture teachers connect with one another to share everything related to professional development.

## Something for Everyone

"Communities of Practice is wide open, and that's one of the wonderful

things about it," said Alissa Smith, NAAE Associate Executive Director. "If you need it to find one great lesson idea, use it for that. If you need it to help figure out how to set up an alumni chapter, you can use it for that. If you just need it as a sounding board for a professional question or problem you're having, it is great for that too. It's a space for agriculture teachers, full of stuff shared by agriculture teachers. That means it's got professional development agriculture teachers want and need, not what other people think agriculture teachers want and need."

"The most common way I use CoP is to find lessons, ideas and inspiration," said Craig Kohn, an agricultural educator at Waterford Union High School in Waterford, WI. "When I am in a rut for planning a lesson, CoP is the first place I turn for ideas and inspiration."

"I think agricultural educators are the most effective and underutilized tool in elevating and improving the rigor and relevance of agricultural education," he said. "To do so, we need an engaged national team of instructors who are willing to collaborate to create advanced, inquiry-based lessons that will engage our students in ways that no other subject can. CoP is defi-

nately an invaluable and irreplaceable tool in coordinating the efforts of instructors across the country."

## How it works

CoP is free, and open to anyone who is an agricultural educator or who has a professional interest in agricultural education. Anyone can view the site or download resources, but a person must register to contribute. Registration involves filling out an online form that includes professional information, areas of expertise, and the registrant's connection to agricultural education. Currently about 20 percent of all agricultural educators in the United States are registered users on CoP.

"I find it fascinating to hear from others around the country – to network, share resources, collaborate with one another, etc.," said Cathy Shoaf Berrier, agriscience educator at Ledford High School in Thomasville, NC.

Berrier is also the volunteer facilitator for the biotechnology commu-

nity. CoP is organized by topic areas, called communities, and each area is overseen by a volunteer, usually an agricultural educator, who has expertise in that area. Facilitators contribute materials to their communities, make sure questions are answered in a timely manner, generate activity, and generally ensure their community is running smoothly.

“I use CoP often and I felt the desire to give back,” said Berrier. “Why recreate the wheel if we can share or ‘steal’ ideas from one another? I feel that every ag educator has wonderful ideas and suggestions – why not become a facilitator and share my knowledge and resources?”

### **Continued Support After Professional Development**

In addition to being a clearing-house of ideas and information on any and every agricultural education topic, CoP is also utilized by groups to provide ongoing support *after* a professional development experience that physically brings teachers together.

The Curriculum for Agricultural Science Education (CASE) uses CoP as a way to continue support for teachers after they leave the 80 hour hands-on professional development that prepares them to teach the course.

“We try to provide as many ways as possible for people to ask questions,” said Marlene Mensch, CASE Curriculum Director. Within the CASE community, there is a place for general questions, as well as sub-communities for each of the CASE courses – Introduction to Agriculture, Food, and Natural Resources, Principles of Agricultural Science – Animal, and Principles of Agricultural Science – Plant. This creates a place for teachers who may have a very specific question about a lab or les-

### **What’s on Communities of Practice?**

Lesson and unit plans and ideas created by other agriculture teachers. Wisdom and advice on everything from dealing with students to filling out FFA forms. Professional development workshop opportunities

### **How do I Use Communities of Practice?**

Visit [www.naae.org/communities](http://www.naae.org/communities). Look around – find resources you can use. Register. After your account is approved, you can upload documents, start a blog, or share your opinions and advice.

### **Interested in becoming a Facilitator?**

Talk to Julie Fritsch, NAAE Communications/Marketing Coordinator. [jfritsch.naae@uky.edu](mailto:jfritsch.naae@uky.edu) or 859-257-2224

### **Want to use CoP for a special group or project?**

There are several options for creating private groups or communities to help you work on projects, give post-meeting support, or any number of other functions. For help figuring out your best option, contact Julie Fritsch, [jfritsch.naae@uky.edu](mailto:jfritsch.naae@uky.edu) or 859-257-2224.

### **Want to let others know about Communities of Practice?**

We’re always looking for help spreading the word. Put on a workshop, give a presentation, or just talk to other teachers about it. We’ve got flyers, presentations, and outlines to help. Visit the “Promote Communities of Practice” community, or contact Julie Fritsch at [jfritsch.naae@uky.edu](mailto:jfritsch.naae@uky.edu) or 859-257-2224.

son to ask others who are also teaching the same course for help.

This summer, Mensch is encouraging CASE lead teachers, who help conduct the professional development sessions known as Case Institutes (CI’s), to create private groups for anyone who attends their CI. Teachers can go into that private area to ask questions they may be hesitant to ask in a public forum, either because the question seems too simplistic, or too specific. It also helps that those teachers have spent two weeks with the other community’s participants, so they may feel more comfortable approaching them.

“There have been some really good questions that have come up on our community,” said Mensch. “A lot of sharing ideas being passed around. I think as people get used to having that mechanism available, they’re going to utilize it more and more.”

Other groups who use CoP to bring together teachers for professional development include the Ohio TIP group for teachers in Ohio’s Teacher Induction Program, the Connecticut Association of Agricultural Educators, and even the New Professionals’ Course, which is a part of an agricultural education class at the University of Nebraska Lincoln.

## The Bottom Line

There are times when we all wish we could call on a group of our colleagues to share advice or experience. CoP is a way to do just that.

“I think first and foremost the design is very effective,” said Kohn. “Clearly there was foresight in organizing and creating the CoP setup. It is both user-friendly as well as efficient to search and utilize, which is often a rare combination in technology.

Furthermore, it engages instructors across the country. Because agricultural education is such a diverse subject, we tend to have varying

views on how the subject should be taught and on the roles of ourselves as instructors. CoP provides us with the opportunity to see the many faces of agricultural education while enabling us to capitalize on the wide variety of experience out there. This kind of academic diversity can only serve to strengthen our ability to prepare young people for the many careers waiting for them in the industry.

Finally, I guess it just feels real. To hear instructors pour their heart and soul into a problem or to feel the excitement of new teachers describing their successes makes CoP have a sort of authenticity that is lacking in other sources. The ag teacher com-

munity is definitely a great one, and this is certainly reflected by CoP.”

To get started on Communities of Practice, visit [www.naae.org/communities](http://www.naae.org/communities).



*Julie Fritsch is the Communications and Marketing Coordinator at NAAE headquarters in Lexington, KY.*

## *The Power of Professional Development* (continued from page 6)

make connections with staff in other subject areas.

There are also other free sources of professional development available to ag teachers without ever having to leave your classroom. NAAE's Communities of Practice is a wonderful way to connect with other ag teachers from all over the country on a daily basis. Available as a part of the NAAE website, it is a free message board where ag teachers can ask questions, browse topics organized by subject area, and post lesson plans and other classroom resources. As a new ag teacher, I utilized this website on a daily basis and used it as a way to get my questions answered, to obtain ideas for FFA preparation for my students, and to find activities to use when I had a substitute.

Getting involved with your state agricultural education association is also a great source of free professional development. Many associations meet on a monthly basis using conference calls that you can participate in from your classroom. Information is exchanged via e-mail, and it is a great way to get to know the other ag teachers in your state without having to travel. The officers are usually master teachers and are great sources of advice and information when you need it! These associations keep you up to date on what is going on in agricultural education on local, state, and national levels and help keep you connected with your fellow ag teachers in your state.

Professional development is one of the most valuable resources that

a new teacher can utilize. It helps to ease the loneliness of being a single teacher program and serves as an excellent way to keep you connected to other ag teachers. Professional development can give you the resources you need to become a more effective ag teacher, as well as ideas for lessons to enhance and improve your curriculum. Without taking advantage of professional development opportunities, my first year never would have gone as well as it did. Professional development is a tool that has the power to turn your first year from your worst year to one of your best!

# Unpacking Professional Development

by Wes Crawford & Greg Thompson

Two important details should not be overlooked when taking a trip. Preparation for the journey is essential to success, but just as important, is to unpack and reflect on the memories. The same can be said about professional development opportunities. To get the most out of a professional development opportunity, it is necessary to prepare or pack for optimal learning, just as when planning a trip. When arriving home, we must unpack the experience to ensure implementation of what we learned.

Life-long learning is a culture in the agricultural education profession. Motivated agriculture teachers take advantage of the many professional development opportunities to keep current with the dynamic changes that take place in education and the agriculture industry. Fortunately, there never seems to be a shortage of professional development opportunities in our profession. Professional development insures that teachers have the content, process, knowledge, skills, dispositions, and accountability to help all students achieve high standards. The challenge is to make a concerted effort to unpack the learning and put it to use in our program.

Professional development can be a deceptive term in agricultural education. To some, the term conjures images of tedious, mind-numbing inservice days and workshops. To others, it is a process where we work to enhance our professional practice, whether it is technical, pedagogical, or total program development. Professional development is not a one-shot, one-size fits all event, but rather an evolving process that yields growth in professional practice, our

students and our programs.

## Packing for the Professional Development Experience

Before you spend a week or few days at a professional development conference, you prepare: pack your bags, book the rooms, and make any

**Sustain your professional development by recruiting a mentor.**

other needed arrangements. But do you prepare yourself? Whether we're headed to a week-long event or just an hour, the mindset we walk in with is critical to learning.

It is important to approach any professional development program with a positive attitude. There are teachers who walk into a professional development opportunity with the attitude that the program is a waste of their time and they are only there because it is a requirement. There are also teachers who no matter how many professional development opportunities they attend, they are determined to take something from the program. Which teacher do you think will learn and grow from the experience?

We've all participated in sessions that include people who clearly don't want to be there. They are either the person who a) doesn't bother to pay attention, b) is full of reasons the subject doesn't apply to them, or c) actively disputes everything stated. At best they're wasting their time; at worst, they are wasting your time.

Has this been you? We don't always choose the professional de-

velopment we attend. However, we do have the choice to be positive and look for ways to effectively use the information. At the very least, it will be a chance to reflect and evaluate what you are currently doing. Many teachers also appreciate the opportunity to network, share ideas, and meet

with other professionals to discuss common goals. Don't forget to pack a positive attitude to learn and grow.

## While You're There

Think about your best students. What characterizes them? Typically, they pay attention, contribute to discussions, and often go beyond the learning in their thinking. And they don't text under the table. Are you the same way in professional development?

Be here and now. Put the e-mail away, silence the phone, focus on the task at hand, and be an active participant. It's our time to use or lose, so why not do our best in learning. As a leader, your attitude can have a big impact on the outcome for yourself as well as others. If we are always asking ourselves the question "How does this apply for me or my classroom?" we'll find more ways to apply it later.

## Unpacking Your Experience

There you are: leaving a great experience at (insert your last PD here) conference, brimming with new ideas and bags stuffed with handouts, notes, and materials. And as soon as you get home you...leave the papers

in the bag, stack the binders on the shelf, and don't move them again until you come home from the next conference. So you shove them out of the way for the new stuff, and the cycle continues. Maybe there is a better way.

Making professional development a sustainable activity enhances our teaching and ultimately benefits our students. Sustainable professional development begins before the experience, during the learning, and then it must be set up in a way that it will be implemented at the right time.

No matter how engaging the presenter, or how innovative the concept, what really matters with professional development is whether or not we use it. There are several methods that will help us ensure we put good ideas to use.

*Run Into It.* This concept isn't exclusive to Covey. You learned about a great new curriculum piece - a teaching strategy or activity. Now how do we remember to use it next April when we teach that unit? Create a document or note and put it with your other curriculum materials you typically use. This could mean putting a physical note in your file drawer, or creating an electronic file and saving it with other class materials on your computer. Get home and get it in place, then feel free to forget about it until you literally *run into it*.

*Test Drive It.* You just heard an interesting idea, but will it work? Before you decide to commit to an entire paradigm-shift in your lesson planning, try it out first and as soon as possible. Don't give up after the first try; after all, hopefully your first time driving wasn't during your license exam. Give it at least three attempts, and make your assessment to keep it or toss it. The book *Good to Great* describes Starbucks' strategy

of "try a lot of things and keep what works." Why not do the same in your program?

*Eat the Elephant.* You've tried it, you like it. Now you realize you want to overhaul every lesson you teach for the next eight months. How do you do this without a huge amount of work? The same way you eat an elephant - one bite at a time.

Instead of throwing away what you're already doing, tweak it. If your new goal is to change from teacher-led to student-directed learning using a strategy you just learned, keep your content, your interest approaches, your objectives, etc., but do change your teaching one lesson at a time. A few minutes of adjustment each day is much more realistic than spending two months rewriting the entire next semester. In short, no matter what change you're making, do it one bite at a time.

*Create accountability.* Integrity may be doing the right thing when no one is looking. But how do we ensure sustainability and accountability when using professional development? Who is making sure we really do improve our craft?

We can do it ourselves with a little bit of planning. One way is to self-coach. Let's say you are working on giving effective directions. Leave a note on the back wall of your classroom that you can read from the front. It doesn't have to be detailed, just a reminder to you: "Effective!" would be enough to remind you what to do, without being a distraction for your students. They won't even realize the coaching that's happening from the back of the room.

Another effective way to sustain professional development is to recruit a partner or mentor. Many people find success in developing a habit of exercising by partnering with some-

one else. Why not do the same with your teaching? This could be someone who attended the same professional development or not; all they have to do is check in with you on a regular basis to mark your efforts. Our students put in more work when they know the assignment is going to be graded by you, and the same is true when we have someone checking up on our progress!

The opportunity to continuously improve our profession and art is both a benefit and a necessity in agricultural education. We can effectively engage and teach our students the knowledge, technical skills, and abilities demanded by a dynamic industry. Make sure you are maximizing your time and your influence by unpacking and sustaining your professional development when it matters most - when you are back home and ready to teach.



*Wes Crawford is an Agricultural Science and Technology Teacher at Sutherlin High School, Sutherlin, Oregon.*



*Dr. Greg Thompson is a Professor and Department Head in Agricultural Education and Agricultural Sciences at Oregon State University*

# Professional Development: The Bridge From Where We Are to Where We Want to Be

by Wm. Jay Jackman

Recently I was reading a book in which the author pointed out that a bridge is something that connects us from where we are to where we want to be. That made a lot of sense to me ... and it caused me to think of many ways that this concept of a bridge can be applied. The bridge concept came



to me again as I was preparing this article related to professional development for agricultural educators.

I was enrolled in agriculture classes all through my high school years. Had I had the opportunity to enroll in agriculture classes in middle school, I would have. My family (dad and brother) has a rich tradition in agricultural education; so, I knew as a youngster that I would take agriculture classes and be a member of the FFA.

In addition to my family's agricultural education traditions, I had great agriculture teachers. In fact,

other than my mother and father, my agriculture teachers were the most influential persons in my young life. As of this year, I'm 50...and I still think back on the important life skills I learned from my agriculture teachers and my agricultural education professors in the universities I attended. I have been blessed, indeed, with family and teachers who cared about me, desired for me to thrive in

all that I did, and saw to it that I was successful. My family and teachers were a bridge for me ... to move me from a developing adolescent to a successful adult who has tools and talent to make a contribution to personal relationships, community, and profession.

Reminiscing a bit more ... when I was a high school student, our "vocational agriculture" programs were focused on preparation for entry-level jobs in agriculture, mostly production agriculture. During my junior and senior years, my ag teacher recognized that several of my classmates and I were college-bound, so he added an "advanced production agriculture" class for us. (That too, was a bridge!) Today's agriscience and agribusiness programs have grown tremendously. In fact, I have often made the statement that our profession has, and must continue, to move from the tra-

ditional vocational agriculture programs of the 1970s to agriscience and agribusiness programs for the 21<sup>st</sup> century.

Today, agricultural education programs serve two masters. One of our masters is the agriculture industry. We have a responsibility to prepare the next generations of human capital to meet the needs of an expanding agricultural industry. The agricultural industry is facing a huge challenge to expand food production and distribution systems to feed over nine billion people in the world by the year 2050 ... and do to so with less land in production and fewer inputs of water and nutrients. The agricultural industry is looking to us to fill the human resources pipeline with scientists and business people to meet these needs. For us to meet these needs, we must move the focus of our programs to agriscience and agribusiness.

Agricultural education's second master is the public school system. It is rare that public school administrators and teachers get together to discuss the extent to which they are meeting the human capital needs of the agriculture industry! However, it is commonplace that school administrators discuss ways to increase student achievement as measured by standardized test scores. School administrators are going to evaluate programs, including elective programs such as agricultural education, on the extent to which they are contributing to student achievement. So, in order for us to ensure our place within the school system, we must ensure that we are contributing to student achievement.



Agriculture teachers must become science, math, and reading teachers - not to supplant or replace so-called academic science, math, and reading teachers - but to supplement the good work of the academic teachers in the applied science- and math-based context of agriculture, food, and natural resources. For decades, we have claimed to teach science and math in the context of agriculture ... and, without a doubt, we have been doing so. But, often, the science and math has been taught by chance or happenstance. What must change is that we must teach the science and math (and reading!) intentionally. We must be sure our students understand the connection between the science and math they learn in their academic classes and the science and math concepts we are applying in our agriculture classes. And then, we must be sure the students will recognize the science and math concepts they applied in agriculture class when they see those concepts again on the standardized science or math test. Agricultural education must be the bridge between science/math concepts and science/math applications and science/math content on standardized tests.

We are first and foremost teachers! We teach in the context of agriculture. And, if we take this approach to our programs, we can, indeed, serve both of our masters ... the agriculture industry and the school system.

Our universities with pre-service teacher education programs in agricultural education have the responsibility to prepare the next generations of agricultural educators to be agriscience and agribusiness educators. But, we have thousands of agricultural educators currently teaching who are seeking to move professionally from where they are today to where

they want to be related to agriscience and agribusiness. The bridge to move current teachers from where they are to where they want to be is professional development.

The National Association of Agricultural Educators (NAAE) is committed to professional development for agricultural educators. NAAE has initiatives that are specifically targeted to current teachers who are seeking to expand their teaching prowess as well as their technical competence. Here is a brief description of some of these initiatives:

**Communities of Practice (CoP)** – NAAE’s CoP provides an opportunity for agricultural educators nationwide to communicate with one another, share resources, and grow professionally within dozens of topic-based communities related to agricultural education. Just as social networking sites have become important communications tools worldwide, NAAE’s CoP is becoming increasingly important for professional networking in agricultural education. About one-fourth of our nation’s agricultural educators are subscribed to CoP and more people are subscribing each day. You can access CoP from the NAAE website at [www.NAAE.org](http://www.NAAE.org)... just follow the prompts on the website.

**Curriculum for Agricultural Science Education (CASE)** – CASE is an initiative of The National Council



for Agricultural Education and managed by NAAE. Often CASE is referred to as a curriculum initiative, but, in reality, CASE is a professional development initiative for agricultural educators, because the strength of CASE is the professional development that is offered to those who wish to teach a CASE course (or courses). CASE is professional development, curriculum development, student assessment (at many levels), and certification for students, teachers, and programs across four pathways including animal science, plant science, agricultural systems and technology, and environmental science and natural resources. To learn more about CASE, go to [www.CASE4Learning.org](http://www.CASE4Learning.org) or contact the NAAE office.

**National Agriscience Teacher Ambassador Academy (NATAA)** – The NATAA is an initiative that is designed to teach agricultural educators inquiry-based methods of teaching. NATAA participants learn teaching techniques that help students take responsibility for their learning. The teachers facilitate student learning through interactive activities and projects. About 20 new teachers are selected (through an application process) each year to participate in the NATAA (and we are hoping to ex-

pand this program to include more teachers in 2012). The generous sponsorship of DuPont makes the NATAA possible. Contact NAAE for more information.

**National Agriscience Integration Institute (NAII)** – The NAII brings teams from states together to develop respective state plans to move toward inquiry-based teaching and learning in agricultural education. The NAII program content ensures that participants understand inquiry-based methods and directs the state teams through a planning process to infuse inquiry throughout the agricultural education programs. Contact NAAE for more information.

**Teachers Turn the Key Program** – TTTK is an initiative that recognizes the best early-career agriculture teachers in our nation. The TTTK, sponsored by RAM, is designed to encourage and moti-

vate these outstanding individuals to choose to continue their careers in agricultural education as classroom teachers, statewide coordinators, or teacher educators in agricultural education.

**Professional Development Workshops** - NAAE also offers dozens of professional development workshops at the National FFA Convention, the NAAE/ACTE convention, regional NAAE meetings, and at state agricultural education association meetings. We know that hour-long workshops are not the most effective opportunities for long-term professional development; however, the short workshops do provide important concepts and content that individual participants can use to enhance their professional development.

All of these professional development opportunities serve as bridg-

es to transport us from where we are to where we want to be. Each of us must make a choice that we want to grow and expand our expertise in our chosen profession – in terms of teaching methods to enhance student learning and in technical content. I encourage you to look for your bridge ... and let it carry you to great things for yourself professionally, for your students, for the agricultural industry, and to secure your place in contributing to student achievement within your school.



*Dr. Wm. Jay Jackman is Executive Director of the National Association of Agricultural Educators.*

## ***The Agricultural Education Magazine: 2012 Themes***

### **January February**

#### ***Agricultural Education Magazine Potpourri***

Many times potential ideas for articles do not fit the proposed themes. This is your opportunity to submit an article that does not fit a theme. This issue will also allow the Editor to publish “extra” articles that were cut from previous issues because of limited space.

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### **March April**

#### **Going Green with Agricultural Education**

Many times local agricultural education programs are leaders in implementing new ideas/technologies into the local community. This issue will explore ways local programs are incorporating “green” techniques into their curriculum.

#### **Theme Editor:**

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## **May June**

### **Serving Students with Special Needs in Agricultural Education**

Meeting the needs of students with disabilities has been formalized in the past 30 years to include “504 Plans,” “Individual Educational Plans (IEPs), as well as access to new assistive technologies. What gains and creative responses worked in your program? What specific challenges face agriculture teachers who teach subject matter that includes psychomotor skills, leadership, and SAEs?

#### **Theme Editor:**

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## **July August**

### **Using Interactive Technologies in Agricultural Education**

Facebook, Twitter, personal response clickers, texting, gaming technologies.... The list of interactive technologies goes on. How are agricultural education teachers taking advantage of interactive technologies to enhance their educational activities?

#### **Theme Editor:**

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## **September October**

### **The CASE initiative**

The Curriculum for Agricultural Science Education™ (CASE™) project has developed a structured sequence of agriculture courses and serves as a model for elevating the rigor and relevance of agricultural education. This issue will explore the successes of the CASE™ curriculum in agricultural education.

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## **November December**

### **Successful Programs and their Traditions**

There are many successful agricultural education programs across this nation. With success come traditions. In this issue agricultural education programs will share their successes and traditions.

#### **Theme Editor:**

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*Wm Jay Jackman*  
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