

Feature Story

UAVs for Extension

By **Mace Bauer**
Agriculture Agent III and CED
UF/IFAS Extension Columbia County
mgbauer@ufl.edu

For some time now, it seems one cannot pick up a farm magazine without seeing a story about Unmanned Aerial Vehicles, or UAVs. Readers of these magazines are bombarded with stories on “UAVs for farmers” and “UAVs for consultants.” Authors never seem to approach “UAVs for Extension.” Now is the perfect time to address where Extension stands on the adoption of this technology.

Florida is expected to be a frontrunner in the development and implementation of UAV technology. The state already



Mace Bauer, Extension Agent, demonstrates the maneuverability of an unmanned aerial vehicle, often referred to as a 'drone'. Photo by Jason Walker

has a large footprint in the aviation industry due to Federal government operations, manufacturing, and pilot training facilities. Additionally, Florida’s 100 billion dollar agriculture industry is suggested as a key early adopter of UAVs, according to a report by Embry-Riddle Aeronautical University (Sustainability Report: Economic Impact of Uninhabited Vehicles of Florida Agriculture).

The Association of Unmanned Vehicle Systems International (AUVSI) has predicted that the UAV industry will have an economic impact of 13.6 billion dollars and will create 70,000 new jobs by 2017. AUVSI projected the number of jobs will reach 100,000 by 2025 with a projected 82 billion dollar impact nationwide. They further predicted that 80% of the commercial market will be in the agricultural industry. Additionally, an expected 40,000 UAV units will be sold by the end of 2015.

With support from Dr. Dan Duarte in Agricultural and Biological Engineering and funding from the center for Public Issues in Education, we purchased an entry level UAV with photo and video capabilities with the focus of exploring Extension program development. We conducted meetings and site visits with

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farmers, extension, and researchers to explore applications and educational needs of the local agricultural community. Each time the technology was demonstrated, farmers indicated that they were interested in buying a unit to use on their farm. In reality, most UAV work will be conducted by commercial service providers using advanced equipment and protocols in order to obtain the resolution of data required to impact management.

Field scouting and mapping are some of the expected applications in agriculture. The valuable data obtained with UAV's can be used to make yield estimates, identify nutrient deficiencies and pest outbreaks, and develop prescription maps for growth regulators. Upon seeing the nearly instantaneous interest in adoption and potential uses indicated by agriculturalists, the role of extension involving UAVs is clear. The foundation of extension was to identify applications of new technology and educate users in the implementation. That mission remains as applicable today as it was in 1914.



Operational controls of the UAV. Photo by Jason Walker



Hovering UAV, equipped with GoPro camera. Photo by Jason Walker

UF/IFAS Extension has teamed up with Florida Farm Bureau and Embry-Riddle Aeronautical University to develop a curriculum to train the next generation of agriculturalists and pilots. The goal is to prepare students to deliver this technology and integrate it into existing agricultural production systems. This preparation and certification will help them develop the essential skills to blend aeronautics, imagery and agricultural applications. Students will be prepared for employment with farms that are implementing the technology into their

management or with service providers who are delivering the technology to farmers and agri-businesses.

The University of Florida/IFAS is working hand in hand with partners to fulfill its most valuable role: finding answers to problems and delivering those answers in ways that users can understand at the time they need them.

On-line Professional Self-Development



Wendy Wilber

UF/IFAS Extension
Alachua County
Florida Master
Gardener Coordinator
wilbewl@ufl.edu

David Grady: How to save the world (or at least yourself) from bad meetings

http://www.ted.com/talks/david_grady_how_to_save_the_world_or_at_least_yourself_from_bad_meetings

Since we so often work collaboratively in our District and in our IFAS organization, it is imperative that we plan, deliver and attend well-run meetings. I love a well-run meeting: one that has a tight

agenda, a well-defined objective, and one that is attended by the appropriate people.

An epidemic of bad, inefficient, overcrowded meetings is plaguing the world's businesses — and making workers miserable. David Grady has some ideas on how to stop it. This is a quick TED talk (15 minutes or less) that will help you think about meetings a little differently.



CONGRATULATIONS to Wendy, our new Florida Master Gardener Coordinator

From the District Director



Eric Simonne

UF/IFAS Extension
DED – NE District
esimonne@ufl.edu

Are You Easy to Work With?

Florida Extension continues to focus on Faculty soft skills and professional development.

Using the topics below, reflect on how often or when you used the strategies below:

1. When dealing with others, how often do you confuse inspiring respect with managing by intimidation?

2. When was the last time you openly admitted making a mistake?
3. Should you focus on problems or on solutions?
4. Are you optimistic or pessimistic? In other words, is the glass half full or half empty?
5. How easy is it for you to delegate? (to delegate: to entrust, assign or transfer responsibility of a project or task)
6. How often do you catch yourself managing, micro-managing, or nano-managing?
7. How often do you play role reversal or try to predict how others perceive you? How would you react in this situation if you were on the other side of the table?

8. If problems are like alligators, is it easier to deal with them when they are small or full size?
9. How often do you catch yourself taking credit for successes and deflecting blame for failures onto others?
10. How do others feel when they hear “You’re lucky to even have a job”, “Just figure it out”, “Someone told me bad things about you”, “I don’t have time for you”, “That’s a dumb idea”, “Listen and don’t ask questions”, “What’s wrong with you?” and the likes?

Success Stories



Shaina Bennett

UF/IFAS Extension
Baker County
4-H Youth
Development Agent
slbennett@ufl.edu

Just Feeling Normal

Youth with special needs often feel like they just want to be normal. At school, they have Individualized Education Plans (IEPs) and 504 plans that prohibit discrimination of people with special needs. These plans can limit and often embarrass youth because they cannot participate, or they must act in a different capacity from their classmates. One of the essential elements of 4-H is belonging. Belonging helps with fostering a sense of “family” for youth.

A feeling of belonging has been evident for Katie, a first year 4-Her who has special needs. Sometimes, in school, she cannot participate in activities, and that makes her feel like an outcast. Her mother said that since Katie has joined the Cloverleaf Cloggers and All-County 4-H Clubs in Baker County, she has become more outgoing and said she feels like a “normal” kid. Katie loves participating in her club meetings and even choreographed her own baton routine and dance for County Events. She is excited to participate at District Events and feels that 4-H is the only place where she feels equal. These experiences that youth have in 4-H not only help them feel welcome in the organization; it helps them gain confidence, raise their self-esteem, and feel like they belong.



These 4-H kids are having tons of fun by 'belonging' and 'just feeling normal'.

Information Technologies



Stacey Ellison

NE 4-H Regional
Specialized Agent
UF/IFAS Extension
staceye@ufl.edu

Email - Not Cat Mail!

Nothing feels better than opening your in-box on Monday morning (or any other given day) and finding a slew of emails

that don't pertain to you, don't matter to you, and keep you from finding the information that really does matter. Wouldn't you agree?

Ok, neither would I. Apparently, neither would the authors of this infographic designed by OnlineITDegree.net. My favorite points to sending valid email are:

- Use specific titles: "Taskforce Meeting June 10th at 2 p.m." vs. "Read Now"

- Be concise! When possible, limit emails to three sentences.
- Don't send emails about cats! Questions? Go to:

<https://ne4h.files.wordpress.com/2014/11/email-e1416443811987.jpg>
(click on the link above to view infographic)

Featured County Extension Office

Duval County

By **Larry Figart**

Extension Agent
UF/IFAS Extension Duval County
lfigart@ufl.edu

Duval County is located along the east coast of northeastern Florida. The county, founded in 1822, was named for Florida Governor William Pope DuVal. In 1968, Duval County and the City of Jacksonville formed a consolidated government. Instead of having a County Commission, Duval County is governed by a mayor and 19 city council members. This consolidation made Jacksonville the largest 'land area' city in the United States.

Duval County is a large, metropolitan county with a population of over 850,000 residents. With two naval installations in the county, the military is the largest employer. Jacksonville is a port city and the logistics of transporting goods and services by rail, truck, and shipping is a leading factor in the Duval County economy. Millions of tons of raw materials and manufactured goods move through the city annually.

UF/IFAS Extension in Duval County has thirteen extension agents and twelve program assistants on staff. Mike Sweat is the County Extension Director. The agents serve their clientele by performing over 5,000 field and office consultations and hosting over 62,000

participants in group learning events every year. This is accomplished with the help of 445 extension volunteers. For more information about UF/IFAS Extension in Duval County, go to <http://duval.ifas.ufl.edu>.



Lovely landscaping at the UF/IFAS Extension Office Duval County located in Jacksonville

Success Stories

The Great Garden Detectives

By **Lori C. Wiggins**

Family & Consumer Sciences Agent III
UF/IFAS Extension Taylor County
lwiggins@ufl.edu

As part of the University of Florida/IFAS Food and Nutrition Program, we are committed to teaching children about good nutrition and how to grow healthful foods.

Childhood obesity is a serious, growing health concern in the United States. The Centers for Disease Control and Prevention reports that the prevalence in obesity increased for children aged 2-5 years, from 5% to 12.4%; for those aged 6-11 years, from 6.5% to 17%; and for those aged 12-19 years from 5% to 17.6% over a 30-year period, from 1976-2006. Obese children are more likely to develop heart disease, Type 2 diabetes, asthma, and sleep apnea, and to experience social discrimination. Fortunately, obesity can be fought with regular

physical activity and healthy eating habits. Central to good nutrition is eating fresh fruits and vegetables daily.

The Food Nutrition Program, with help from local Master Gardener volunteers, teaches children about good nutrition and how to grow healthful foods at the Taylor County Elementary School. All 228 third grade students get weekly hands-on gardening instruction from planting to harvesting, and nutrition education such as basic food preparation skills.

The Great Garden Detective Adventures curriculum from the USDA is used to help students discover which fruits and vegetables are the sweetest, crunchiest, and juiciest through a series of investigations and fun experiences that connect the school garden to the classroom, school cafeteria, and home. Students are learning how to eat healthy and prepare simple, healthy recipes from their freshly harvested crops. Research shows that youth are more likely to try new

foods and develop taste preferences for them when the foods are offered at an early age.

Each participating classroom is also getting to grow its own hydroponic garden through this program. These gardens are used to teach the students a new and fresh, innovative concept of growing plants without soil.

Gardening is an effective activity used to teach children where food is grown, the benefits of eating healthy foods, and the science of growing, harvesting and preparing food. School garden activities reinforce the importance of consuming fruits and vegetables, and promote environmental changes. By teaching good nutrition habits and basic gardening skills, gardening is empowering youngsters with knowledge that will serve them for a lifetime.

Resources: Centers for Disease Control (CDC) <http://www.cdc.gov/obesity/data/childhood.html>



Students learn important lessons about the science of growing healthy food.



Third graders at Taylor County Elementary School enjoy learning about nutrition.

Teaching Tips



Jim DeValerio

UF/IFAS Extension
Bradford County
Agriculture/
CRD Agent
jtd@ufl.edu

Happy To Teach?

Happy to teach? Sometimes. As Extension agents, we often get bogged down with all the mundane, yet important aspects of our jobs. Our energy and enthusiasm for helping people (providing research based information at the right time in the right way) can be drained away by all the reporting, paperwork, meetings and emails that are required of us. If this hasn't happened to you yet, it will, so consider these tips to get your teaching back into that fun and fruitful place.

Stick to the basics. Our secret sauce is timely technology packaged palatably. Become an expert. Choose a topic that is relevant to your clients and that you can enjoy mastering. Don't be shy about getting help on your journey to master the topic. If an in-service training is not

offered, request one. Find an agent with the expertise you need and volunteer to help out with some activities that will help you develop hands-on experience. Your clients will be excited to attend your workshops and you will be excited to teach when you become confident in teaching your topic.

Prioritize your goals. You can't do everything, and there's always more to do now than there was last year. In the nine years I have been in Extension, I have noticed that getting busier is a byproduct of doing our jobs, so we have to leave some things behind, at least for a little while. Resolve to leave the workplace on time, but leave the work at work. The renewed energy will reflect positively in your outreach.

Follow up on your client's progress. There is nothing more satisfying than having a client learn new concepts or benefit from behavior changes as a result of your efforts.

Document your success. Write up your accomplishments right away in your ROA while the event is fresh in your

mind. Recording the impacts as they occur will make report writing much easier at the end of the year and prevent some of the burnout alluded to at the beginning of this article. Keep a working draft of your next ROA on your desk top. Having the planned programs in a table format within the document makes it easy to fill in along the way.

Helpful links and ideas:

- Knowing what is expected of your performance will help you focus your efforts. Get familiar with the UF/IFAS professional development website at: <http://pdec.ifas.ufl.edu/> In-service training opportunities are list here, too.
- This is a link to a great publication from Rutgers on preventing burnout in Extension: <http://www.joe.org/joe/2005june/a5.php>
- Consider participating in some physical activities on a regular basis. We are not the first Extension Agents to wrestle with this issue: <http://www.joe.org/joe/1979january/79-1-id1.pdf>

District Life

Extension Wellness Starts with Us!

By **Heather M. Janney**
4-H/FCS Agent II
UF/IFAS Extension Hamilton County
hfutch@ufl.edu

As Extension agents, we should practice what we preach! Once a year, 4-H agents and program assistants from all over Florida come together to attend the

Youth Development Institute (YDI). We learn a lot, but we sit still in meetings, abstracts, and trainings for long hours. A small team of 4-H Youth Development and Family and Consumer Sciences Agents issued a Wellness Challenge to the 85 registrants at YDI 2015. The challenge was an opportunity to bring awareness to our habits of sitting still and not thinking about our own



4-H Camp Ocala Resident Director, Sarah Whitfield, leads a couple of agents in an afternoon Pilates class: stretch your body, stretch your mind.

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What's Working?



Amy E Morie

Environmental
Horticulture Agent II
UF/IFAS Extension
Clay County
amorie@ufl.edu

Making a Water Teaching Tool

When teaching water concepts, do you feel like your content ‘pours’ in one ear and out the other? In looking for ways to make learning more engaging, the Environmental Horticulture Agent partnered with Clay County Soil and Water to create a teaching tool that will capture imaginations and provide memorable learning experiences. The Soil and Water folks provided the financial support to create our own model for demonstrating hydrology and pollution movement within the Floridian aquifer. The agent built the model using trial and error to devise the best components for many of the parts involved.

The model was created with Plexiglas, plastic tubing, craft stitch sheets, and dish scrubbing pads. Sand and two types of gravel were used to form aquifer layers. Including the price of test materials that did not work out for the final models, the entire project cost around \$300. This is a very reasonable option compared to commercially available models (Envision Groundwater Flow Simulator model has additional functions but at a price of around \$1150). Our goal is to undertake additional development to make this a feasible project for most Extension offices. The entire model should be kept both affordable and buildable, needing only two days labor and access to a circular saw and blade that cuts plexi or acrylic.

Filling the model with water provides a lesson on how water is stored in the aquifer, and youth are always surprised to see how much water fits in the seemingly small spaces between the gravel and sand. There are deep and shallow wells for injection, and another set for pumping. Youth are invited to ‘pollute’ the model along the ground plane, as well as through two injection wells, using food coloring solutions. As the pollution moves through the model, additional watershed lessons are discussed. Finally, pumping the water back out of the wells demonstrates the gradual spread of pollution through the system. The preliminary lesson was developed to demonstrate the model. We are currently collecting comments and suggestions from educators and youth so we can make revisions based on the feedback.

The model has been very popular with our youth audiences. It has been presented at three youth group events. Follow-up questions have been used to informally gauge knowledge gain as well as to reinforce the lessons of the model.

Youth enjoy being able to have hands-on engagement with the model, and are quick to appreciate the implications of pollution on our water resources. When asked what they had learned at the end of the session, a few select quotes exemplify the typical answers we’ve received:

- “a lot of water is stored underground and that’s what we drink and use”
- “we shouldn’t be polluting the ground because it pollutes the water”
- “we need to keep water clean because it’s too hard to clean up after it’s dirty”

Next year we plan to expand use of the Model to Master Gardener training and hope to develop an instrument to gauge knowledge gain and willingness to change behaviors, thus reducing ‘pointless personal pollution’. We’d love to hear from any agents interested in providing feedback or in helping with the development of this tool – please drop a line to amorie@ufl.edu and get ‘wet behind the ears’ in a new water teaching tool.



Prototype Hydrology Model: Floridan aquifer function and nonpoint source pollution.

Extension Wellness Starts with Us!...continued from page 6

well-being during the conference. This challenge encouraged attendees to make simple changes and add healthier habits to the typical experience.

During the conference, all attendees were provided water bottles and pedometers to assist in achieving their goals of becoming more active, paying more attention to the things they consume, and finding a balance of work and family. Each of these components contributes to the physical and mental well-being of individuals. Healthy Living Activity Sessions were scheduled throughout the

three days of the conference. Each morning, attendees could choose to attend a yoga class and each afternoon, they could choose to attend a Pilates class or take a group walking tour. A written challenge was also issued and could be turned in for a chance at winning a fitness tracking device. During the conference, participants reported that they completed a total of 944 healthy activities.

One participant was heard after her walk saying, "how relaxing it was to be able to go on a walk with co-workers". Another

participant reported that he had achieved a total of 22,196 steps on Thursday; he said that was much higher than his average of 9,000 to 11,000 steps per day. He was so proud of himself that he shared a photo of his pedometer showing his high number of steps on a social media site that evening. Several participants asked about healthy living opportunities being offered at future conferences. Upcoming opportunities will include a wellness challenge as well as a 5K walk/run to be offered at EPAF. Extension Wellness started at YDI 2015. Let's continue it at all Extension meetings!

UF/IFAS Extension Northeast District Offices – Find your local office at <http://solutionsforyourlife.ufl.edu/map/>

Alachua

2800 NE 39th Avenue
Gainesville, FL 32609
Phone: 352.955.2402

Baker

1025 W Macclenny Avenue
Macclenny, FL 32063
Phone: 904.259.3520

Bradford

2266 N Temple Avenue
Starke, FL 32091
Phone: 904.966.6224

Citrus

3650 W. Sovereign Path, Suite 1
Lecanto, FL 34461
Phone: 352.527.5700

Clay

2463 SR 16 West
Green Cove Springs, FL 32043
Phone: 904.284.6355

Columbia

971 West Duval Street, Suite 170
Lake City, FL 32055
Phone: 386.752.5384

Dixie

99 NE 121st Street
Cross City, FL 32628
Phone: 352.498.1237

Duval

1010 N McDuff Avenue
Jacksonville, FL 32254
Phone: 904.255.7450

Gilchrist

125 E Wade Street
Trenton, FL 32693
Phone: 352.463.3174

Hamilton

1143 NW US HWY 41
Jasper, FL 32052
Phone: 386.792.1276

Lafayette

176 SW Community Circle, Suite D
Mayo, FL 32066
Phone: 386.294.1279

Levy

625 N Hathaway Avenue, Alt. 27
Bronson, FL 32621
Phone: 352.486.5131

Madison

184 College Loop
Madison, FL 32340
Phone: 850.973.4138

Nassau

543350 US Hwy 1
Callahan, FL 32011
Phone: 904.879.1019

Suwannee

1302 11th Street SW
Live Oak, FL 32064
Phone: 386.362.2771

Suwannee Valley Ag. Ext. Center

7580 County Road 136
Live Oak, FL 32060
Phone: 386.362.1725

Taylor

203 Forest Park Drive
Perry, FL 32348
Phone: 850.838.3508

Union

25 NE 1st Street
Lake Butler, FL 32054
Phone: 386.496.2321

NE NEWS Editorial Team

Nichelle Demorest (chair), Jessica Altum, Basil Bactawar, Jim DeValerio, Sarah Ellis, Larry Figart, Alicia Lamborn, Amy Morie, Natasha Parks, Wendy Wilber

Graphic Design

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