

GRANTS & CONTRACTS UPDATES

- Dr. Micheal Fultz, Chemistry, \$44,275, IDeA Network for Biomedical Research Excellence, National Institutes of Health
- Dr. Gerald Hankins, Biology, \$43,120, IDeA Network for Biomedical Research Excellence, National Institutes of Health
- Brad Cochran, Extension, \$14,000, Specialty Crop Block Grant, U.S. Dept. of Agriculture
- Dr. Barbara Liedl, Agricultural and Environmental Research Station, \$16,000, Specialty Crop Block Grant, U.S. Dept. of Agriculture
- Sherry Shafer, Regents Bachelor of Arts program, \$6,000, Degree Now – Adult Learners, WV Higher Education Policy Commission
- Jaime Adkins, CASTEM, \$5,000, 4-H Robotics Program Year 2, 4-H
- Dr. Barbara Liedl, Agricultural and Environmental Research Station, \$10,000, Extension Implementation Program sub-award, U.S. Dept. of Agriculture
- Dr. Sanjaya, Agricultural and Environmental Research Station, \$336,962, Laboratory Instrumentation, U.S. Dept. of Defense
- Dr. Robert Barney, Agricultural and Environmental Research Station, \$100,010, IDeA Network for Biomedical Research Education bioinformatics, National Institutes of Health
- Sherry Shafer, Regents Bachelor of Arts program, \$7,542, Complete College America, WV Higher Education Policy Commission
- Melissa Stewart, Extension, \$50,000, AgrAbility sub-award, U.S. Dept. of Agriculture
- Dr. Barbara Liedl, Agricultural and Environmental Research Station, \$97,507, Capacity Building Grant sub-award, U.S. Dept. of Agriculture

PROGRAM SPOTLIGHT

Maximizing Profitability and Productivity for Sustainable Multiple Vegetable Crop Production in West Virginia High Tunnels funded by W.Va. Department of Agriculture via the USDA Specialty Crop Block Grant

By Barbara Leidl, Ph.D.

There is a major push to increase production and consumption of locally grown food across the U.S. One way for farmers to do this is to add season extension techniques, such as high tunnels, to a farming operation. In West Virginia, high tunnels have quickly risen in the farming landscape with about 20 in 2007 to over 400 in 2014. In this way, high tunnel growers are able to access main and lucrative early- and late-season markets. Vegetables are the main crops grown in high tunnels, with the following crops in order of importance: tomato, sweet pepper, cucumber, muskmelon, lettuce, summer squash and eggplant.

Researchers at Michigan State University found income from high tunnel production falls far short of what they would pay for the cost of the high tunnel as quoted by a variety of sources. According to the researchers, many of the choices were based on management decisions and record keeping. If that is the case, then what are the best recommendations that we could make to W.Va. growers to maximize their high tunnel space, time and production costs to grow more produce profitably?

Finding information on how to grow a single crop in a high tunnel, such as tomatoes, is easy. However, most W.Va.

farms are not interested in growing a single crop but instead to produce multiple crops and maximize profits. No schedule or recommendations for multiple crops exist for in-state growers at this point. Several growers have experience with growing selected crops, but there has been no concerted effort to research this issue. There is also concern among agriculture specialists on the continual production of one or many crops within a high tunnel could create pest and nutrient build-up issues that have not been assessed. Therefore, the next logical step is to determine what crops and scheduling plans are necessary to maximize profit and yet maintain good sustainable agricultural practices in the high tunnel.

In January 2015, we began our two-and-a-half-year project to develop yearlong vegetable production schedules with associated enterprise budgets for W.Va. small farmers. Specific objectives are to engage four growers within 80 miles of the WVSU campus as research partners to evaluate crops, production methods and economics of high tunnel vegetable production; train the growers via quarterly meetings in production and financial methods and data collection methods for the project; verify monthly grower progress via “check-ins” and data collection; and create year-round production schedules with associated enterprise budgets to be evaluated by the project participants before being released for use by growers and ag service providers. Stay tuned for updates on this project.

- Kelli Batch, Extension, \$123,000, 4-H Mentoring Year 5, U.S. Dept. of Justice
- Kelli Batch, Extension, \$109,958, Expanded Food and Nutrition Education Program formula funds, U.S. Dept. of Agriculture
- Patricia King, Health and Human Performance, \$4,000, Campus Tobacco Control, WV Wellness Council
- Dr. Orlando McMeans and Kitty McCarthy, \$100,000, GEAR-UP 2015, WV Higher Education Policy Commission
- Dr. Padma Nimmakayala, Agricultural and Environmental Research Station, \$36,880, IDEa Network for Biomedical Research Excellence Natural Products, National Institutes of Health
- Dr. Gerald Hankins, Biology, \$38,500, IDEa Network for Biomedical Research Excellence Natural Products, National Institutes of Health
- Dr. Kerri Steele, Criminal Justice, \$146,480, Community Assessment and Education to Promote Behavioral Health Planning and Education (CAPE) 2 – Cabell County, U.S. Dept. of Agriculture
- Dr. Kerri Steele, Criminal Justice, \$101,756, Community Assessment and Education to Promote Behavioral Health Planning and Education (CAPE) 2 – Kanawha County, U.S. Dept. of Agriculture
- Dr. Micheal Fultz, Chemistry, \$25,000, Center for Layered Polymeric Systems (CLiPS) subaward, National Science Foundation
- Dr. Jose Toledo, Research and Extension, \$5,000, WVSU/Mexico Outreach, WV Higher Education Policy Commission.
- Dr. Michael Fultz, Chemistry, \$5,000, Project Seed, U.S. Department of Agriculture
- Melissa Stewart, Extension, \$38,600, Aeroponic High Tower, Appalachian Regional Commission
- Kelli Batch, Extension, \$53,341, HSTA 15, West Virginia University
- Dr. Paige Carney, Health and Human Performance, \$63,508, ITQ-Hungry For Words, U.S. Department of Education

HEALTH SCIENCES AND TECHNOLOGY ACADEMY (HSTA)

By Derrien Williams

For over 10 years during the summer, high school students have traveled to West Virginia State University from as far as Mercer and McDowell counties and as close as Cabell County. Founded in 1994, the Health Sciences and Technology Academy (HSTA) is a 9th-12th grade math and science enrichment program that encourages aspirations, opens doors and empowers underrepresented students and rural communities. The goals of HSTA, which was founded in 1994, are to advance the knowledge of middle and high school students in science, math and leadership skills, while also increasing the number of underrepresented, minority and rural community individuals to successfully pursue careers in Health Sciences, Middle/Secondary Science and Math Teaching, Speech Pathology, and Audiology. After successfully completing the HSTA program, which includes attending “Fun with Science” and “Biomed I&II” at Marshall University and West Virginia University, respectively, students are rewarded with a HSTA tuition waiver which covers eight semesters of undergraduate tuition, along with a waiver for graduate school.

When HSTA students step foot on the campus of WVSU, one of the first things they will encounter is yellow tape and a chalk outline of a victim. During their weeklong stay, they are faced with the challenge of solving a murder. Students learn the proper procedures associated with the criminal investigation process, which includes rotating through laboratory experiences in areas such as Fingerprint Identification, Drug Identification, Handwriting Analysis, Thin Layer Chromatography and DNA Analysis. As part of the process, students have the opportunity to interview six to eight prospective suspects and reenact how the crime happened on the final day.

In addition, WVSU is the first university to incorporate the idea of the “HSTA-lympics” into their program. Students are usually in the classroom from 8:30 a.m. until 4:30 p.m. The afternoon is used as recreational time for students. While the students participate in activities such as bowling, attending a baseball game and having a pool party, it was important that an exercise component was added. According to the Centers for Disease Control and Prevention, in 2012, 67.4 percent of adults were overweight, with a Body Mass Index of 25 or greater, while 32.5 percent were obese, with a Body Mass Index of 30 or greater. Only 22.6 percent were physically active for a total of at least 60 minutes per

day on each of the 7 days prior to the survey (CDC, 2009). Sadly, the CDC (2010) states among West Virginia’s children aged 2 years to less than 5 years, 14.4 percent were overweight. The obesity epidemic is starting at an early age and worsening each year they grow older. During the HSTA-lympics, students compete against other groups in events such as kickball, co-ed flag football and basketball, track events, and tug-of-war. Not only does the HSTA-lympics encourage daily physical activity, which can be beneficial in improving strength and endurance, controlling weight, and improving blood pressure and cholesterol levels, but it also gives students a taste of college life. It promotes inter-personal communication and also time management. You may have class all morning, but it is imperative that you find time in your busy schedule to exercise due to its multiple benefits. Reporting in the *Journal of American College Health*, the research team found that about 70 percent of students gained a significant amount of weight between the start of college and the end of sophomore year.

This year, a new component was added to the program, as students participated in a project on bullying and dating violence. Over the past few years, both have become prevalent in high schools and universities. While the ultimate goal is to encourage students to attend college and pursue careers in Health Sciences, Middle/Secondary Science and Math Teaching, we also want the students to be prepared for some of the everyday challenges they may encounter during the college experience. When you visit the WVSU Extension Service webpage, the phrase “Extending Knowledge. Changing Lives” is present. HSTA Summer Institute is an example of how WVSU is extending knowledge and changing lives.

CDC. Behavioral Risk Factor Surveillance System: Prevalence and Trend Data—Overweight and Obesity, U.S. Obesity Trends, Trends by State 2010. nccd.cdc.gov/NPAO_DTM

CDC, Division of Adolescent and School Health. The 2009 Youth Risk Behavior Survey. cdc.gov/HealthyYouth/yrbs/index.htm

CDC. Division of Nutrition, Physical Activity, and Obesity. 2010 Pediatric Nutrition Surveillance System, Table 6 (PedNSS). cdc.gov/pednss/pednss_tables/tables_health_indicators.htm

Racette SB, Deusinger SS, Strube MJ, Highstein GR, Deusinger RH. Weight changes, exercise and dietary patterns during freshman and sophomore years of college. Journal of American College Health, vol. 53(6); pp. 245-251, May/June 2005.

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- Dr. Kerri Steele, Criminal Justice, \$21,480.50, CAPE 2-Kanawha, U.S. Department of Agriculture
- Kelli Batch, Extension, \$37,000, Summer Transportation Institute, Department of Transportation
- Katherine McCarthy/Dr. R. Barney, Enrollment Management and Student Affairs, Extension, \$5,500, Governor's School-Bechtel Summit, WV Higher Education Policy Commission
- Dr. Orlando McMeans, Research and Extension, \$841,588.40, State Research Match 2016, WV Legislative Appropriations
- Dr. Orlando McMeans, Research and Public Service, \$808,120.60, State Extension Match 2016, WV Legislative Appropriations
- Barbara Korn, Education, \$80,000, Teacher Training 2016, WV Department of Education and the Arts.
- Dr. Jose Toledo, Research and Extension, \$2,696,990, EPSCoR (15-20), National Science Foundation
- Dr. Naveed Zaman, Mathematics and Computer Sciences, \$17,000, Space Grant/NASA STEM, NASA
- Dr. S. Malkaram, Biology, \$138,600, INBRE Bioinformatics, National Institute of Health
- Kellie Toledo, Student Support Services, \$4,000, Diversity for Equity, WV Higher Learning Policy Commission
- Melissa Stewart, Extension, \$135,000, CYFAR SCRATCHcrath 5, U.S. Department of Agriculture
- Dr. Sean Collins, Biology, \$299,042, CBG-Whitefly Resistance Watermelon, U.S. Department of Agriculture
- Dr. Umesh Reddy, Biology, \$299,940, CBG-Phenomics for Crop Improvement, U.S. Department of Agriculture
- Dr. Ami Smith, Research and Extension, \$40,000, Watershed NRGRDA, New River Gorge Regional Development Authority
- Jack Wiseman, WV Clearinghouse, \$5,000, Explore (WVFAIR), WV Department of Education

Dr. Robert J. Barney, Interim Asst. Vice President for Research and Public Service and Associate Dean and Associate Director at West Virginia State University, Announces Retirement

After more than five years of service at West Virginia State University, Dr. Robert J. Barney announced his retirement effective July 31, 2015. Barney served at WVSU as Interim Assistant Vice President for Research and Public Service since 2013, as well as Associate Dean and Associate Director of WVSU's Agricultural and Environmental Research Station since arriving at State in 2010.

"Dr. Barney has been an integral part of the 1890 Land-Grant Community for three decades in various administrative and research capacities at Kentucky State University and West Virginia State University," said Dr. Orlando F. McMeans, Vice President for Research and Public Service at WVSU. "In particular, he has been an asset to the advancement of the research agenda at West Virginia State. His leadership and commitment to the University's land-grant mission, public service and research has made a lasting and invaluable impact on the local and regional community as well as at the University's Agricultural and Environmental Research Station. We have been honored to have Dr. Barney be part of the WVSU family and anticipate that, even in retirement, he will continue to be an active State family member."

Barney said he has been proud to be a part of the significant progress WVSU's research portfolio has achieved and is confident that good work will continue.

"From expanding the research portfolio into the West Virginia Regional Technology Park to establishing the Research Rookies program and helping solidify State's standing as one of West Virginia's three research universities, I am grateful for the many opportunities I was presented with at West Virginia State University," he said.

Prior to joining WVSU, Barney was associate director for Research at Kentucky State University. He received the Bachelor of Science in Zoology from the University of Illinois, the Master of Science in Zoology from Eastern Illinois University and earned the Ph.D. in Entomology from the University of Kentucky. His tenure at WVSU also includes serving as Interim Dean of the College of Natural Sciences and Mathematics in 2014-2015.

Barney has over 60 publications in scholarly journals in the areas of integrated pest management, biological control, beetle taxonomy and biodiversity, and environmental assessment and conservation. He is a member of the Entomological Society of America, the Coleopterists Society, the Entomological Collections Network, the Association of 1890 Research Directors, the Association of Public and Land-Grant Universities and a former president of the Kentucky Academy of Science.

Upon retirement, Barney plans to focus on his entomological research and continue to publish on beetle taxonomy and ecology, as well spend time with his wife, Sherri, their two sons and two grandchildren.

WE HAVE A GREAT GRANT FAQ

Grant applications usually want a lot of little bits of data and information besides your program narrative and budget. The Frequently Requested Grant Information link, under the Research section of the university webpage, is a cornucopia of names, numbers, titles and just about any other obscure piece of information you might need to complete an application. You can find it at: wvstateu.edu/Research.

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- Dr. Orlando McMeans, Research and Extension, \$2,004,778, Title III Part B, U.S. Department of Education
- Dr. Orlando McMeans, Research and Extension, \$806,241, Title III Part F, U.S. Department of Education
- Brenda Wamsley, Social Work, \$599,688, CBG-Grand Families, U.S. Department of Agriculture
- Dr. Jose Toledo, Research and Extension, \$599,997, CBG-INCUBATOR in Southern West Virginia, U.S. Department of Agriculture

CAPACITY BUILDING GRANTS SUBMITTED

One of the most important grant competitions for land-grant universities is the 1890 Capacity Building Grants program, which is an \$18 million program restricted to the 19 1890 land-grant institutions in the U.S.

West Virginia State University submitted 12 grants by the March 26 deadline, the maximum allowed, requesting \$6.12 million. Grant guidelines dictate that no institution can receive more than 10 percent of the total funds available, or \$1.8 million. In past years, WVSU has done well in this competition, receiving at or near the maximum allowed for a single institution. Preliminary results of this year's competition suggest that WVSU will, once again, receive the maximum amount of allowable funds.

BUSINESS & FINANCE NOTES & UPDATES

- Please use the current forms that are on the WVSU R&D Corporation website link. These are the most updated forms. If the correct form is not used, it will be sent back to you.
- **Mr. Stephen Seitz** will be handling Fixed Assets, Account Receivables and Reconciliations, Revenue and Expenditures Reconciliations, Surveys, and handle all Due from Expenditures and Invoicing.
- **Mrs. Shannon Skiles** is in charge of all Research and Extension, EPSCoR and Facilities budgets.
- **Mr. David Stone** is in charge of all other budgets, invoicing and reporting.

RESEARCH & PUBLIC SERVICE NEWS & UPDATES

Please join me in congratulating **Dr. Ami Smith** on her promotion to Associate Vice President for Public Service and Director of Extension. We would also like to congratulate **Dr. Ulises Toledo** on his promotion to Associate Vice President for Administration. In addition to his many administrative responsibilities, Dr. Toledo will provide leadership for and direct the Office of Sponsored Programs. Other changes within the Corporation are as follows: **Mr. Stephen Seitz** has been promoted to Assistant Director of Business and Finance and **Mr. Eric L. Jackson** has been promoted to Special Assistant to the Title III Director.

5 COMMUNICATION TACTICS THAT CAN BOOST PERFORMANCE BY 50 PERCENT

Organizations with leaders who communicate effectively perform almost 50 percent better than those with the least effective leaders, a Towers Watson study found. Powerful communication skills are critical for the overall direction and impact of a leader's vision. It doesn't matter if it's a presentation, one-on-one directive or casual conversation. All are more effective if they are clear. Here are five essential tactics to communicate more effectively and eliminate problems that arise from misunderstandings:

- **Be Prepared:** Gather relevant facts and information, study and know more about your message than you plan on sharing.
- **Have Substance:** Many people speak to be heard. Be clear on what you want to say before you start talking. Plan your points. When listening to other people, pause before responding so you can plan what you want to communicate.
- **Be Sincere:** People can sense honesty and authenticity. Speak at the correct level. Respect your audience's knowledge level and speak to it. Avoid talking over people's heads or beneath them.
- **Repetition:** Repetition is especially important when making presentations or asking people to change their behavior or improve performance. Repeating your message ensures everyone knows what you expect and curbs those costly mistakes due to misunderstandings.
- **Be Consistent:** When the message is important to ongoing circumstances, refer to it constantly and be consistent. When communicating the message, keep the meaning and expectation consistent to ensure the positive response and outcomes you want.

NUTRITION CORNER

with Derrien Williams, Extension Agent and Certified Personal Trainer, ISSA

By now, you may have heard that there are multiple benefits to physical activity. If you haven't, according to the Centers for Disease Control and Prevention, physical activity can help:

- Control your weight
- Reduce your risk of cardiovascular disease
- Reduce your risk for type 2 diabetes and metabolic syndrome
- Reduce your risk of some cancers
- Strengthen your bones and muscles
- Improve your mental health and mood
- Improve your ability to do daily activities and prevent falls, if you're an older adult
- Increase your chances of living longer

Adults need at least 2 hours and 30 minutes (150 minutes) of moderate-intensity aerobic activity (i.e., brisk walking) every week and weight training muscle-strengthening activities on two or more days a week that work all major muscle groups (legs, hips, back, abdomen, chest, shoulders and arms), according to the CDC.

Often times, when we set out to boost our physical activity level to get in better shape, we try to climb a mountain in an hour with sandals and no climbing equipment. Too often, the end result is a downward spiral back to bad habits because you may have exerted yourself too much and too fast. Not only is this counterproductive, but you also put yourself at risk of cardiac events, such as heart attacks, since there's a sudden increase in physical activity.

According to the International Sports Sciences Association, research shows that training 3 to 4 hours per day, 5 or 6 days each week, provides no greater benefits than when training is limited to only 1 to 1.5 hours per day. Simply put, Rome wasn't built in one day. Below are some tips if you are starting to exercise or getting back into exercising:

- Always eat at least 5 times a day – When you eat infrequently, your body recognizes a famine situation and your entire endocrine system is thrown for a loop. Then, too much of the food you consume is stored as body fat in preparation, according to ISSA.

- Adjust your carbohydrates according to your activity. If you are going to exercise, then you should consume more carbs. But, if you are taking a nap, then you will need less carbs.
- Eliminate junk food – Most junk foods have high amounts of fat, sodium and sugars.
- Consume high fiber foods – Fiber promotes digestion, while also reducing cholesterol.
- Use resistance training – Muscle burns fat, but you must build the muscle first.
- Seek help – If you are a beginner to resistance training, then you may want to seek help from a certified professional. Improper form or technique can result in injury, which can delay your attempt to get in better shape.
- Attempt to drink at least eight glasses of water – According to ISSA, water makes up 55 to 75 percent of your total body weight. Water replenishes any fluids that you lose and also prevent you from becoming dehydrated.

If you follow these tips, you will be on your way to a better, healthier person. I can't promise you will have a six-pack by next week or lose 30 pounds in two weeks, but you will have set the foundation for good things to come.

QUESTION: According to the ISSA, you should consume approximately 0.8 to 1.0 grams per pound of bodyweight of which compound?

ANSWER: Protein. Your body uses protein to make structural and biochemical reactions that are required for muscle contraction, cardiovascular function and immunity from disease. Protein is essential for growth and recovery. According to ISSA, when you go several hours without consuming protein, you enter into a catabolic muscle-wasting state, which means the body is eating itself to attain the amino acids it requires for proper function. As a result, muscle will disappear and body fat will reappear.

Centers for Disease Control and Prevention (2015). "The Benefits of Physical Activity." cdc.gov/physicalactivity/basics/pa-health/index.htm

Hatfield, Frederick. Fitness: The Complete Guide. International Sports Sciences Association Certified Fitness Trainer Program. (2013). International Sports Sciences Association.

POLICY ALERT

Addendums and changes have been made to both the R&D Operation and Employee Handbooks. Please view those changes by visiting the Research and Development link on the University's website.

When submitting Purchase Orders, please make sure all areas of the purchase order are completed, including Funding Source, full address of the vendor, contact person information and reason for purchase. The contact person information is the individual that is responsible for the items once received, not the individual that prepares the purchase order.

Please visit the R&D website and utilize the new Travel and Credit Card Requisition Forms.

THE DANGERS OF SITTING

Study after study has highlighted the dangers of a sedentary lifestyle, which include extended periods of sitting. Physical inactivity is an epidemic that is causing all sorts of health problems. It has been associated with almost every chronic disease, including cancer, cardiovascular disease and type 2 diabetes. The World Health Organization has stated that physical inactivity is one of the leading health concerns and is closely associated with increased rates of non-communicable diseases. According to experts, humans need to be vigorously active for at least an hour a day. However, a very small percentage of western society achieves that. Vigorous activity is more than just normal walking. A person's heart rate needs to be elevated, and individuals need to be engaged in an activity that is physically demanding. An hour of fast walking is an example of vigorous activity. In addition, the more physical activity you incorporate throughout the day, the better the results. This is due to the fact that sitting is an independent risk factor. The more you sit,

the worse your health is going to be. Along with the one hour of vigorous physical activity, the more physical activity you can insert throughout your day, such as walking, moving or getting up to move around, the healthier you are going to be.

Sitting for extended periods of time decreases blood flow. The human body has two full circulatory systems. One is the blood system and the other, and least known of, is the lymphatic system. When you move, you push fluids through all the tissues of your body. Fluids moving through the lymphatic system are one of the main means the body fights off illnesses. The lymphatic system acts like a filter for the body by catching viruses and bacteria and killing them. Decreased circulation can result in decreased flexibility and decreased nutrients supplied to muscles and the brain. The human body can be compared to a stream of water. If the water is moving, it is full of vitality and life. If the water is still, it becomes stagnant with low oxygen, and viruses and bacteria are allowed to multiply.

Greg Wells, assistant professor in the Faculty of Kinesiology and Physical Education at the University of Toronto, and an associate scientist in physiology and experimental medicine at the Hospital for Sick Children, suggests the best idea is to try adding short bouts of activity throughout the day. Use the 20/20 rule. For every 20 minutes of sitting, stand up and stretch 20 seconds. In addition, within every two-hour block, try to find 15 minutes to do some activity, such as walking or using the stairs. Even just standing for a while is better than sitting.

Studies also show that physical activity not only improves physical wellbeing but also cognitive performance. Physical activity and exercise activate the areas of the brain associated with memory, learning, problem solving and concentration. Physical activity actually floods the area of the brain used for cognate thought with oxygen and nutrients.

(Lab Manager, Jenny Hall, University of Toronto July 18, 2014)