Fall 2014

The Challenge: Magazine for The Center for Gifted Studies (No. 35, Fall 2014)

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The Gatton Academy Tops the U.S. Rankings

For the third consecutive year, The Carol Martin Gatton Academy of Mathematics and Science in Kentucky has been named the number one public high school in the country. *Newsweek* reported number one rankings in 2012 and 2013; and *The Daily Beast*, a major communication outlet, placed The Gatton Academy at the top of the list released in September 2014.

This three-peat as the number one high school in the United States is an extraordinary accomplishment. Rankings are based on college bound rate, rigor of the curriculum, graduation rate, ACT/SAT scores, and percentage eligible for free or reduced lunch. The Gatton Academy ranked number one overall as well for rigor of the curriculum, college-bound rate, and graduation rate.

In 2007, The Gatton Academy was launched as Kentucky’s residential school for high school juniors and seniors with talent and interest in careers in science, technology, engineering and mathematics. Seven graduating classes later, The Gatton Academy has had one or more students from 113 of Kentucky’s 120 counties.

Gatton Academy applicants submit their ACT score and grades for their ninth and tenth grade years, essays, and letters of recommendation. The final step in the application process is an interview. The deadline for the online application is February 1 of each year.

For information about The Gatton Academy, visit wku.edu/academy or email academy@wku.edu.
Dear Friends of The Center for Gifted Studies,

Thank you for helping The Center for Gifted Studies serve as an important center within the United States and beyond. Please know that our center would not exist without friends. That statement is true in various ways. We depend upon your help with marketing our programming, your monetary gifts, and your volunteer hours.

As you share information about programs offered by The Center for Gifted Studies, you market opportunities to individuals and families who likely would not otherwise know about them. A first-hand recommendation of a Saturday or summer program trumps any other way that The Center can disseminate information.

Annual gifts as well as endowments create and maintain our programs. Those gifts also make it possible to offer financial support for young people to participate in programs, those who must have financial assistance to do so. Summer experiences are valuable, even life changing, as comments highlight: “The best thing about camp was being in an environment with people like me and taking classes I wouldn’t get to take otherwise.”

Volunteers augment the opportunities that a small staff can provide. Student volunteers enhance Super Saturdays classes as they assist teachers. The Center certainly depends on members of the Advisory Board who offer ideas and provide support. Volunteers haul books for the Advanced Placement Institute, one of the biggest chores. Volunteering your skills adds to the expertise needed for our year-round programming. Your suggestions on feedback forms are read carefully and applied in future programs.

Thank you! Let’s continue to stand together for excellence in education.

Sincerely,

Julia Link Roberts
Mahurin Professor of Gifted Studies
Dear Center Alumni,

We alumni of The Center are perpetual learners, always seeking to improve ourselves and study the world around us. In this moment of reflection, two things I have learned over the past few years:

First, always start with the ask. The Center for Gifted Studies has helped shape the lives of over 15,000 youth and educators over its 30+ years. You are likely one of them. Would you help us, by making a 5-year pledge, ensure the future of The Center through the endowment of camper scholarships and a part-time staff position focused on alumni engagement? Our goal is $500,000 and any amount is welcome — $20, $100, $500, $1,000 or $2,000. Would you go to wku.edu/gifted to donate now?

Second, know your strengths; harness them. Off the top of my head, I can think of alumni harnessing their strengths as a zookeeper, politician, teacher, parent, PhD in Genetics, PhD in English, PhD in Psycholinguistics, MBA, general manager, entrepreneur, website operator, education reformer, musician, dermatologist, family practitioner, engineers of several types, patent lawyer, grant writer, social worker, and fundraiser.

I am not the fundraiser in that list. Yet, in 2012, I volunteered to help raise $500,000 to endow scholarships and a staff person focused on alumni, because we know it is important work that Dr. Roberts, Dr. Inman, and the entire staff are doing – it is work that has made a difference to each of us, and we want it to continue for the next 30 years and beyond.

I have not excelled at the fundraising task for which I signed up. I have struggled, frankly, to figure out exactly how to do it, to step outside of my comfort zone, to juggle it with my focus on career, to prioritize it when my 4 and 2 year-olds clamor for the attention that I am eager to give them. Just when I think I am getting some momentum, another thing arises – a shyness, a board meeting, or a soccer game.

What I do excel at – a shared trait of so many alumni I have the great fortune to know – is persistence. I signed up for this, and I will see it through. I did make my own pledge, and many others have as well. We are making progress! But we need you so we can complete the task and achieve our goal.

Folks, The Center is doing really important work we all believe in. Its programs have made a difference in our lives. (It altered the course of mine.) Let’s make sure future generations can say the same. Please take a moment, open your web browser, and make your 5-year pledge at wku.edu/gifted/support/index.php.

Persist in this task with me so that The Center will.
Thank you for your support.

Wake Norris
(VAMPY 1989-92; Counselor)
In each edition of *The Challenge*, The Center works to show you what happens throughout our year. From summer programming to seminars, there is never a dull moment here; but, if we only shared what occurs each year, we would be showing you just a glimpse of the impact The Center has made. Thousands of students have attended our programs, which means we have thousands of alumni who have started successful careers around the globe. In Issue 29 of *The Challenge*, we celebrated some of our alums who excelled in visual arts and in Issue 31, we caught up with several of our alums in the medical field. This past summer, VAMPY offered a production and cinematography course entitled “Teenagers on Film,” which inspired this article focusing on alums talented in television and film. (See side bar.)

Andi Ward (SCATS 1989-1990) is currently the supervising producer for *Celebrity Apprentice* on NBC at Mark Burnett Productions in Los Angeles. She describes herself as a freelancer, meaning she works on different shows depending on when they shoot. Some of the shows she has worked on include reality shows *The Amazing Race* and *Hell’s Kitchen.*

“I became interested in television, specifically editing, as a journalism major at Indiana University in Bloomington,” stated Andi. “The journalism school had Avids, which are non-linear editing machines used in the film and broadcast industries. I would spend hours in the editing room. Originally, I moved to Los Angeles to become an editor, but luck-ily I fell into producing, which is a much better fit for me.” A producer is someone who oversees all aspects of video production for a television show. This can include anything from the creative side of television film, such as writing and editing the shows, to some of the more business aspects of a show. “I spend time producing in the field, and I’ll come back to produce in post-production, as well. I get the best of both worlds.”

Andi has worked in the business for nearly a decade, but she goes back to one point early in her career which she considers a “major moment”: “I was an associate producer for an ESPN reality show,” Andi said. “My editor on that show saw how hard I worked and got me a job on *The Amazing Race* as an associate producer. That really helped my career. Another great moment was landing a job as a producer on *Celebrity Apprentice* season 8. Seasons later, I’m now the supervising producer working with the best crew of people both in the field in New York City and in post in Los Angeles.”

While Andi has established a strong reputation in the film industry, she still remembers her time well with The Center: “SCATS was an amazing experience! It was really the first time I got out of my comfort zone. I met new friends and learned new things. The classes I took opened my mind and made me realize that there are so many interesting cultures, people, and ways of thinking. It was so much fun!”

When asked about what advice she would give to young people looking for a successful career in television or film, she had one simple idea: “Work hard. Sometimes it’s luck, but it’s mainly hard work that gets you your next job. But most importantly, remember to have fun. After all, it’s television.”

Charles Haine (VAMPY 1992-1995, Travel to Russia 1996) is a filmmaker and entrepreneur working in the motion picture industry. (Some of you may remember him as Chuck Haine.) Charles founded the Academy Award-nominated production company Dirty Robber in 2008, which has gone on to find success in feature films and shorts as well as commercials and music videos. A production company handles all of the editing, scheduling, scripting, post-production, distribution, and marketing of a film. Charles has also played a part in starting Cinelicious, Coyote Post, and ColorCorrection.com. He directed the feature film *Angel’s Perch*. If not found on the set, Charles can be found working as an educator at the Los Angeles City College, where he is an associate professor of cinematography.
Charles’ desire to work in the film business goes all the way back to his Center for Gifted Studies days when he took creative writing at VAMPY. This spark at VAMPY led to a later realization in college that “cinema was a great meeting place for (his) love of storytelling and images.”

“VAMPY was the first time in my life I felt surrounded with 'my people,’” says Charles. “'My people’ are what I consider ambitious, energetic, smart, funny, and a little outsidery. That experience at VAMPY was incredibly powerful for me and something in some ways I’ve tried to recreate in my adult life.”

And what an adult life Charles has had! Charles has the type of career some in the industry would dream of, but, when asked what his favorite moment is, he goes back to one night: “The premiere of Angel’s Perch in Charleston, West Virginia has to top the list,” stated Charles. Angel’s Perch is the story of Jack and Polly living in the small, historic logging town of Cass, WV. Jack is a successful architect, and Polly is Jack’s grandmother who is suffering from Alzheimer’s. Angel’s Perch examines the delicate relationship between past and present, memory and loss. “Getting to watch the film with hundreds of people from the area where we shot it and seeing the emotional power of their story being told makes it one of my favorite moments,” he reflected.

So what advice does Charles have for students looking at a career in film and television? “Be open to a career that will be full of surprises. The industry is changing dramatically, and there are probably many satisfying projects to work on and roles to fill that might not fit your idealized vision, but that you will find tremendously rewarding nonetheless.”

These are just two of the thousands who have attended programming at The Center and have gone on to successful careers. Are you an alum from The Center? Let us know what you are up to now by going to http://gifted-studies.com/alumni-update-form/.

Lights, Camera, Action!
"Teenagers on Film" Completes Three Films During VAMPY 2014

The 2014 VAMPY class schedule saw a couple of new additions to the docket, headlined by the return of a film class, this time entitled Teenagers on Film. WKU Assistant Professor Dr. Jerod Hollyfield led the class of seventh to tenth graders. “I wanted VAMPY’s inaugural course for Teenagers on Film to be fun,” stated Jerod, “but I also wanted to push a class of talented students to perform to the best of their ability by not shielding them from the routine problems of filmmaking.”

Jerod’s focus was to bring the skills of production and critical analysis to students who were interested in movies but had varying levels of experience with them. In the mornings, the VAMPY film class would screen films and discuss them. In the afternoon sessions, the students split into three groups in order to shoot three 10-minute short films. The students did everything from writing and shot lists to shooting and editing. The three films are Glimpse, Honestly, and Nadia. They will be submitted to an upcoming film festival, so more details or links to the films cannot be provided. (How about that for a movie teaser!) As soon as we are allowed, The Center will post these exciting original works to our YouTube account.

Probably some of the best advice the students received came from screenwriter and The Land Before Time producer Deidre Brenner: “You all have something to say and you don’t need permission or a big budget to tell your stories… Making movies is really about problem solving.”

Perhaps some of these students will follow in the footsteps of alums like Andi and Charles!
Counselors have been an important part of summer programming since The Center for Gifted Studies began to offer a two-week summer camp for 6th-8th graders in 1983. Counselors plan the evening and weekend activities, live among the campers, and work hard day by day to make the camping experience memorable for all participants. The head counselor works and plans with Julia Roberts who has directed the summer programming for The Center since it was first offered. Prior to 1999, Julia and Dick Roberts assumed the responsibilities that were later designated for the head counselors.

Highlights and memorable experiences are numerous for the head counselors.

Leigh Johnson enjoyed the increasingly creative optional activities that counselors designed. She remembers taking SCATS campers to the Tennessee Performing Arts Center to see *Grease* and enjoying Fourth of July concerts performed by Orchestra Kentucky near the Guthrie Tower.

Dennis Jenkins said that optional activities or “mandatory fun” were highlights. He said, “The three years I was the head counselor allowed me to get to know the students at the camps outside the classroom and see them flourish academically and socially with their peers.”

Jonathan Vaughn found “waiting outside at Schneider Hall with Dr. Roberts and the counselors and watching the students come back to the residence halls from their classes at the end of the day” to be a favorite part of each camp day. He said, “I almost always had students who were excited to share what they did that was so cool in class, what they learned, and what they were going to do the next day. The fact they were excited not just about learning but also about sharing is a great memory for me.”

Justin Jatczak said the SCATS and VAMPY Olympics were his favorite activities: “Nothing beats a good ole fashioned tug of war battle in the middle of the summer, followed by a water balloon toss and relay race. It was great watching campers get into supporting their respective countries with war paint on their faces while playing the most intense games of country versus country dodgeball.”

Nicole Heimerdinger stated that some of her favorite activities were “the band concert, the planetarium shows, and VCon. These activities give the campers a variety of experiences they may not be able to have outside of camp. I also love VCon partly because the kids love it so much.”

Mary Johnston said that VCon, cookouts, and the end-of-camp slide shows were favorite camp activities. About VCon, Mary comments, “You just can’t beat an afternoon of concentrated high concept options and The Call of Conn still gives me goosebumps.” She also says her favorite memories of camp “center around the nightly check-ins and hanging out with the girls on my floor. After all, the campers truly make the camp experience.”

Special memories vary for head counselors. Corey Alderdice remembers a father coming up to the counselors who...
were grilling for the Sunday night cookout and asking, “Who has been teaching my kid to play Dungeons and Dragons?” One of the counselors piped up, somewhat sheepishly, worried that the gentleman (who was quite tall and muscular) was upset. The father smiled and said, “Well, I think it’s just great. My buddies and I played D&D to pass the time while we were in the Army during Desert Storm. It’s great that you’re teaching another generation of kids to love it instead of just playing video games.”

Head counselors were counselors before assuming the leadership positions. Each worked hard to see that the counselors were a team and that the campers were always their first priority. Planning has begun for 2015 SCATS and VAMPY. Many camp traditions will carry forward, and new ones will be initiated.

Here is what head counselors are doing now. The parentheses indicate the year(s) the individual was the head counselor.

**Dennis Jenkins** (1999–2001) is the Social Studies Department Head and U.S. History Advanced Placement teacher at Warren Central High School. He teaches Presidential Politics at VAMPY. Dennis and Rebecca have two children: Savannah (7) and Keegan (1).

**Leigh Johnson** (2002-2006) earned a Ph.D. in English from the University of New Mexico in 2011. Currently, she is an Assistant Professor of English at Marymount University in Arlington, VA. Leigh and Patrick have three boys: Seamus (5), Gilbert (4), and Porter (born in July, 2014).

**Corey Alderdice** (2007–2009) is the Director of the Arkansas School for Mathematics, Science and the Arts in Hot Springs, AR, a peer institution for the Gatton Academy. Corey and Stephanie have a son Elliott (4).

**Mary Johnston** (2010-2011) completed a master’s degree in Information Science at the University of Wisconsin-Milwaukee in 2013. She is working as a user experience designer for a tech development shop Noble Applications.

**Daniel Bachman** (SCATS 2000; Travel London 2002, Paris 2003) has been named a Mayo Clinic Research Fellow in Elbow Mechanics. He earned an MD from the University of Louisville in 2013. He did his undergraduate work at the University of Louisville as well, graduating Summa Cum Laude in 2009 with a degree in Bioengineering. He was valedictorian of his class at Williamstown High School in 2005.

**Emily Peeler** (Super Saturdays 2000-01; SCATS 2003; VAMPY 2004-06; Counselor), 2013 graduate of the Louis D. Brandeis School of Law at the University of Louisville, has been appointed to a two-year Washington, DC, fellowship that is a partnership between the National Association of Law Placement and the Street Law Legal Diversity Pipeline Program. The Legal Diversity Pipeline program partners law firms with diverse high schools nationally with the intent of teaching students about the law and legal careers and offering support in that pursuit.

As a fellow, Emily will develop and provide law firms with training and curriculum. A graduate of the first Gatton Academy class, Emily also earned a social work undergraduate degree at U of L, and a master’s degree in Social Work from Boston University.

**Jennifer Robinson** (VAMPY 2003-06; Travel London 2006, Paris 2007; Super Saturdays Instructor), a Gatton Academy graduate, received a bachelor’s degree from WKU in 2011 with a double major in business administration and accounting. She graduated with a master’s degree in Professional Accounting program at the University of Texas in Austin in 2012. She became a CPA in 2013 and is currently a practicing tax accountant at Flieller, Kruger, Skelton & Plyler, PLLC in Austin.


**Olivia Reed** (2013) is a graduate student at Murray State University.

**Nicole Heimerdinger** (2014) is a student at Bowling Green State University where she is studying dietetics.

**Justin Jatczak** (2014) is a second-year medical student at the University of Louisville where he graduated in 2013. Justin is also a graduate of the Gatton Academy.
The 60 campers at The Summer Camp learned the value of looking below the surface during a Tuesday visit from Mr. Rico Tyler of SKyTeach and 17 of his Scholars from the Governor’s Scholars Program (GSP). The first through fourth graders spent the class period making small microscopes and studying different mixtures under larger microscopes alongside the Scholars. The activity was both hands-on and minds-on, a cornerstone of learning at The Summer Camp, which was being offered for the third year through The Center for Gifted Studies.

“It’s an engaging, visual activity that involves the hands,” Rico explained. “One of the basic tenants of teaching is get your students engaged, so I wanted both my Scholars and their students to be engaged.”

After settling into groups of four students and two Scholars, the class set to work creating the small microscopes out of a rectangular piece of Plexiglass, which had to be sanded down on the edges before Rico could drill a hole at the top and insert the lens of a laser pointer. Once the lens was secured, students could examine anything in the room under the microscope.

A gentle hum of activity and discovery developed as students looked through their lenses and marveled at what they saw. From eyelashes to clothing, the world suddenly looked much different. “My shirt looks like a hairy zebra!” one student exclaimed.

David Veizaj (Summer Camp 2014) and Annika Schulstrom (Fall Super Saturdays 2011-13; Winter Super Saturdays 2012-14; Summer Camp 2014) made some fascinating discoveries while exploring with the microscopes.
“When I looked at the $20 bill, it showed little twenties all over the bill,” David described. Annika took her exploration of a friend’s face to the next level: “We attached the microscope to an iPhone and looked at a girl’s eyelashes. It was really cool!”

The day was as much a learning experience for the Scholars as it was for the students. As the instructor for a basic teaching class at GSP, Rico wanted his Scholars to teach in a real classroom with real students, which is hard to do in the summer time. With The Summer Camp, Rico and Julia Roberts envisioned a partnership that would benefit both parties.

One of those beneficiaries was Kevin Reilly (Fall Super Saturdays 2006; SCATS 2010), a Governor’s Scholar with ties to The Center. As he watched students explore with microscopes big and small, Kevin could feel a sense of wonder permeating the room in Gary Ransdell Hall: “I think the students took away a reaction of ‘this is awesome, I love this and want to do more of this,’” he said. “I think most of the students we taught today are going to take their microscopes and find stuff to look at. I think it will inspire kids to be more inquisitive, which is the whole point.”

After exploring their surroundings, students and Scholars turned their collective attention to the big microscopes and the examination of salt, pepper, Epsom salt, and sugar. Each group received their samples from Katie Jo Wallace and was asked to report their observations to Kathryn Briggs. Both Katie Jo and Kathryn are teaching fellows and WKU students.

The groups were given combinations of the four compounds once they identified them individually. To test their observation skills, the groups were tasked with identifying mystery mixtures in two rounds – the first time with 50/50 combinations, the second time with mixtures of different proportions (i.e., 1/3 sugar and 2/3 Epsom salt). The class identified the mystery mixtures with 100% accuracy.

“You had to have good short-term memory to succeed because, if you knew what the sugar, Epsom salt, and pepper looked like, then you could easily find out what the combinations were,” David explained. Annika said each compound had distinct characteristics: “The Epsom salt was in really big chunks. The sugar was like crystals.”

At the end of the class period, both Scholars and students were left with different takeaways from 90 minutes spent looking below the surface. For his Scholars, Rico said: “I hope they take away the basic idea of what it means to communicate something you know to someone else. My course is intended for the teaching all of us are going to do as managers, bosses, directors, and employees. Every one of us teaches at some point.”

For fourth grader Annika, the fifth-grade level experiment provided her with a confidence boost: “I’m surprised. That wasn’t as hard as I thought it was going to be. That means fifth grade isn’t going to be as hard as I thought it was going to be, hopefully.”

To learn more about The Summer Camp and see more pictures from the day spent with Governor’s Scholars, please visit wku.edu/gifted.

“When you are experimenting, do not remain content with the surface of things.”
— Ivan Pavlov
Campers Look for Patterns at The Summer Camp

Students were challenged to find patterns in five classes at The Summer Camp: acting, art, clowning, language arts, and science.

In science, instructor Andrea Heming focused on two types of patterns – color and nature. To study color patterns, the class looked at solutions and chemical reactions that would be easy to replicate at home. For nature patterns, students participated in a scavenger hunt, created edible soil, and designed their own insects.

Cultural traditions were examined in Jessica Kays’ language arts class. The first and second graders created dolls, puppets, quilts, and origami boats that reflected traditions found in three books – The Girl Who Loved Wild Horses, Lon Po Po, and Grandfather’s Journey. The third and fourth graders used the internet to research a key person, place, or law from the 1850s. Their research culminated in a variety of projects, including PowerPoints, Prezis, info cubes, 3-D posters, and presentations.

Clowning gave students a chance to unleash their silly side. Nick Wilkins (also known as Broadway the Clown) had students looking for patterns as they juggled, balanced feathers, learned gags, assembled their costumes, and applied clown makeup of their own design. The class also explored clown history and the types of clowns.

Andee Rudloff used a key idea to guide her art class: “As long as you have an idea, you can be an artist.” Students in her class created personal icons with pastels, practiced portrait art, learned art color theory, discovered complimentary and tertiary colors, engaged in collaborative drawing exercises, and capped off the week by contributing a splash of color to a class mural that Andee designed.

In acting, instructor Julie Boggess worked with the students on tongue twisters in order to improve enunciation, practiced being observant through a game, and had fun playing improvisation games. Math instructor Tyler Clark visited the class one day to teach students about fractals and demonstrated how to build a fractal “cube” out of notecards.

One pattern became impossible to miss as The Summer Camp went along – students smiling, trying new things, working with their hands, and challenging their minds.
Project GEMS (Gifted Education in Math and Science) was a five-year (2008-13) joint venture between The Center for Gifted Studies and the Warren County Public Schools in Bowling Green, KY. Partially funded through the Jacob K. Javits Gifted and Talented Student Act (2008-2011), Project GEMS’ goal was to design and implement a model demonstration project that would increase the number of elementary children who are advanced in science and math and to foster their interest and achievement in science, technology, engineering, and mathematics. This goal specifically targeted children from low-income backgrounds and minorities who were underrepresented in STEM careers.

Participants were third through sixth graders in six elementary schools in the Warren County Public Schools. Per requirements for the Javits, all schools had at least 50% of the population eligible for free and/or reduced lunch; the six schools ranged from 52.3% to 73.8% of the population being eligible for free and/or reduced lunch. Other underrepresented categories were also pertinent. The six schools were divided into three groups: Treatment 1, Treatment 2, and Control. Identified students in Treatment 1 schools participated in problem-based learning (PBL) in both math and science in two settings: a one-day-a-week magnet school called the GEMS Academy and curriculum units taught in their home schools in target classrooms. Students in Treatment 2 schools participated in PBL via curriculum units taught in their home schools in target classrooms. Students in the control schools participated in traditional math and science learning experiences.

**Major Findings**

Results indicated that students who received problem-based learning in science process skills had significant gains when compared to those who received less PBL instruction or none. The positive impact of the magnet program is most evident for science with more accelerated patterns of growth in achievement for most cohorts. While increases in math scores are not significantly different for the magnet or PBL groups compared to the control, this is encouraging from an efficiency perspective. The amount of professional development accrued by PBL teachers was much less compared to the amount undertaken by the control group teachers (e.g., over a two-year period from 2009-2011, control schools had 46 days of professional development stemming from various initiatives versus nine hours for PBL teachers and 12 days for Magnet teachers.) In other words, PBL teachers were yielding similar levels of growth in math achievement with less time and fewer resources allocated to professional development. The instruction, modeling, and coaching in math professional development proved highly effective. (Please go to wku.edu/gifted/project_gems/index.php for complete five-year findings complete with figures and tables.)

**Contribution: Identification Measures**

Because of the many issues associated with identification of gifted and talented children, especially with underrepresented populations, Lohman (2009) argued for a different approach to identification, one based on academic aptitude. He suggested an identification method that used ability test scores with multiple norms, including local and even subgroups within the local populations (e.g., English Language Learners). In determining an ideal protocol for identification, Project GEMS...
followed Lohman’s suggestions. Local norms were used on the math and science subscores of the Iowa Test of Basic Skills (ITBS), Form C. Students were selected based on their relative scores to others in their grade and school. In addition to the ITBS, the nonverbal subscore from the Cognitive Abilities Test was used.

As discussed by Lohman (2008), teacher input was also a factor. The Project GEMS Evaluator, Dr. Steve Wininger, created, piloted, and revised two measures – Teacher Identification Form: Science and Teacher Identification Form: Math – to be part of the identification protocol. Psychometrically strong, these forms helped identify students who may not have otherwise been identified by traditional testing. Aptitude was based on the group itself, and greater identification of underrepresented populations occurred.

Contribution: Curriculum

Problem-based units integrating science and mathematics were developed over the course of Project GEMS. The Innovation Model (see page 11), originally conceived by GEMS Academy teachers in 2009, was further refined during this timeframe. The heuristic was utilized for planning and reflection, both by teachers and by students. The following units are available at wku.edu/gifted/project_gems/objective3.php.

- Bubbleology
- Digital Publishing: STEM Career
- Experimental Design Challenges
- Hitched: An Innovative Approach to Learning about Sustainability and Experimental Design
- Innovation: Sustainable Food Production
- Iron Scientist
- Learning by Design: Discovering Pattern and Purpose in the World Around Us
- Paper, An Innovation?

The GEMS Academy teachers found that the one-day-a-week enrichment program was an ideal setting for the implementation of integrated science and mathematics units. Since participating students were still receiving core content instruction in the regular classroom, GEMS Academy gave them the freedom to explore themes that might not have aligned directly with their grade-level curriculum. For example, our third grade students were able to grasp concepts related to the Pythagorean Theorem, though they typically would not have been exposed to that material until middle school.
Similarly, a student with a keen interest in dinosaurs could explore that topic in connection with a STEM Career unit in which the student studied paleontology— even if paleontology were not related to the core content for their specific grade level. Additionally, the integrated units proved to be a very natural way to offer instruction in science and mathematics. Though the school structure tends to draw bold lines between academic subjects, the real world does not. The use of broad global themes, such as Innovation, Sustainability, and Design, were the perfect vehicle for blurring the lines between related content areas.

Perhaps the most significant findings related to the development and implementation of the integrated units came from the positive responses of the students and their families. The students responded well to open-ended questioning, to increased opportunities for collaboration, and to opportunities to self-select their course of study. However, achieving this level of independence was the result of growth over the course of the grant. Initially, students had great difficulty selecting a research topic. They had deeply ingrained misperceptions regarding risk-taking and “failure.” Over time, students discovered how to be responsible for their own learning. Both the students and the parents responded positively to the progress reflected on the Growth Reports each semester, and both students and parents have expressed strong support for the continuation of a similar program throughout the school district. Regarding the assessment for content validity, that did not occur within the funding cycle of this grant.

**Contribution: Innovation Model**

The Innovation Model was developed to help students and teachers visualize the creative process. It is a cross-curricular model, as easily applied to economics or arts and humanities as the hard sciences. Forward thinkers in all disciplines notice things. They make connections. They wonder and create and anticipate. In fact, one key feature of this heuristic is the presence of certain “soft” words. To be useful for students and teachers, the model must not be cluttered with jargon. Relate. Wonder. Imagine. Reflect. Respond. Share. Those are weighty ideas, equally appropriate for the writer, the historian, the sculptor, or the chemist. The Innovation Model is purposefully non-linear. Innovators do not proceed around this model as if from one o’clock to two o’clock to three o’clock. Rather, think of the bold verbs (i.e., connect, inquire, analyze, enhance) as portals through which one might enter the process of innovation. We all have different strengths, and different students may favor different points of entry. Opportunities for collaboration are abundant. But there is no set beginning point, nor is there a definite end to the process. The Innovation Model mirrors many of the ideas being advanced by Tony Wagner, Daniel Pink, Cathy Davidson, and Ken Robinson.

**Final Thoughts**

One of the main goals of effective educational research is institutionalization. Warren County Schools continued a variation of Project GEMS, focusing on fifth and sixth graders from all of their elementary schools. Academy 212° provides problem- and project-based learning in science, technology, engineering, and math. Project GEMS also served as the impetus for Glasgow Independent School District’s Celtic Academy. Another sign of success has been that the Kentucky’s Advisory Council of Gifted and Talented Education named the GEMS Academy one of four model programs for 2012-2013. This designation brings interest in this model of problem-based learning for elementary children who are interested in math and science.

**Used with permission from David Baxter, Allison Bemiss, Tracy Inman, and Julia Roberts, Western Kentucky University.**
Innovate Kentucky saw two projects take considerable steps forward this year.

**Little Learners, Big Ideas**

Funded by PNC’s Grow Up Great and the James Graham Brown Foundation’s Innovate Kentucky, the Little Learners, Big Ideas video series was completed, and distribution of the six videos began. The videos focus on developing critical and creative thinking skills in young children (see sidebar for descriptions of each one). They have been uploaded to YouTube and will be made available at no cost online and through DVD and USB distribution.

“How do you think aloud with your children? How do you encourage children to work through mistakes and persevere? Why do we need to encourage our children to question and be curious? None of these things can be sold in a box or a bag,” explained Allison Bemiss, who coordinated the development of Little Learners, Big Ideas. “These strategies are a free gift you can give a little learner through conversation and joined learning experiences.”

The six high-quality videos model strategies and activities that can easily be replicated by anyone who works with young children. Many activities shown in the videos are little to no cost: reading books at the library; playing at the park; exploring with food coloring, vinegar and baking soda; and making foil boats. Looking at critical thinking as a process and not a product guided Allison and her team as they designed strategies and activities for the videos.
AN ENVIRONMENT FOR LEARNING
Think back to the best classroom you were a part of when you were in school. What made it the best? Maybe it was what the room looked like. Maybe it was how the teacher made you feel. The video An Environment for Learning helps parents and teachers understand how to create an environment that supports thinking.

WONDER AND CURIOsITY
Children are naturally curious. However, as parents and teachers, these curious minds provide us with a fragile opportunity. Our reactions to their questions give us a chance to either encourage or stifle learning. This video focuses on helping parents and teachers understand how to respond to questions and kindle the fire of wonder and curiosity.

A THINKER’S TOOLbox
If we want our little learners to be able to explore, investigate, and create, they will need specific tools to do so. This video explores ideas to help children investigate ideas. Noticing patterns, making choices, and participating in hands-on, minds-on learning opportunities provide children with the skills they need to fill their “Thinker’s Toolbox.”

LITTLE LEARNERS AND LITERACY
When we hear the word literacy, we often think it means reading. However, the truth is literacy begins long before a child identifies his first letter or reads her first word. Literacy is speaking, listening, reading, and writing. This video focuses on helping parents and educators take advantage of opportunities to promote literacy skills in their little learner.

GROWING YOUNG MINDS
If we expect children to be innovative thinkers, we should also expect them to make mistakes. Mistakes are a natural part of learning, but it is important that they do not become obstacles to learning. Children need an opportunity to be challenged in order to experience this. The Growing Young Minds video gives parents and educators tips to help ensure that children are challenged as well as strategies to help children learn from their mistakes.

LEARNING ON THE GO
Authentic learning can happen anywhere: the museum, the library, the backyard, or the grocery. Learning while out in the real world provides children the opportunity to be curious about the world around them, understand that they can learn anywhere at any time, use new vocabulary, and solve problems as they make sense of the world around them. Learning on the Go provides parents and educators simple but powerful ideas to help their young child learn while out in the real world.

“Sometimes critical or innovative thinking seems like a really abstract concept,” Allison said. “How do you teach a child innovation? Can you mold creative thinking? At first it sounds like a daunting task for educators and parents. But when you break innovation into smaller ideas like wonder and curiosity, it makes it easier for parents and teachers to understand how to encourage meaningful conversations and thinking.”

Accompanying the videos on Innovate Kentucky’s website – innovateky.com – are infographics that summarize the main points of each video and a study guide that explains the strategies and recommends further instruction. Allison and Julia Roberts will be conducting professional development using the videos in the future.

Those seeking hard copies on flash drives can send a request to innovateky@wku.edu. Requests for professional development using the Little Leaners, Big Ideas video series can also be sent to that email address.

IdeaFestival Bowling Green

After a successful inaugural event that attracted 450 idea lovers, IdeaFestival Bowling Green will return to the campus of Western Kentucky University on Friday, March 20, 2015 at the Downing Student Union auditorium. The planning and development boards for IFBG are hard at work lining up speakers and partners for next year’s event. Please send ideas to joshua.raymer@wku.edu.

Watch presentations, see quotes, and relive the excitement surrounding 2014’s festival at ideafestivalbg.com, and keep up with the progress of 2015’s event by following IFBG on Twitter (@ideafestivalBG) and Facebook (facebook.com/ideafestivalBG).

Excited about IFBG 2015 or have a speaker recommendation? Share it on Twitter using #IFBG2015 or send it via email to innovateky@wku.edu.
What is it that makes VAMPY so special, that holds so many summers of gifted middle and high school students excited planning and nervous anticipation—of waiting to see friends from last year and hoping to make new ones this year—of hearing young people say to their families “I learned so much this summer?” Many factors play into the success of a program that will be entering its 32nd year in 2015, but what sets VAMPY apart from most summer camps is that the students come to camp prepared to have fun and learn. Every year around January, The Center for Gifted Studies starts getting phone calls and emails asking, “When will the VAMPY class list be available?”

Who are the passionate and expert teachers who teach VAMPY classes? Three teachers in particular stand out as veterans of the VAMPY teacher experience: Tracy Inman, Kenny Lee, and Ron Skillern.

All three were high school teachers when they started teaching in summer programming at The Center. They got their starts as VAMPY teachers when they were recommended by someone already teaching in VAMPY—a recognition of their ability to motivate and challenge high-ability high school students. Ron heard about VAMPY from Tracy during the early 1990s when they were teaching together at Greenwood High School in Bowling Green. He had taught the subject of Nazi Germany and the Holocaust as part of Senior Seminar and jumped at the chance to teach in a different environment. “I was pleased to learn of an opportunity to teach more in-depth this very important event in human history. I was elated at the opportunity to teach material in a situation where there was ample time to do it right,” Ron said.

Kenny was a teacher at Warren Central High School twenty years ago (and where he still teaches), when he was asked by Doug Jenkins to be his TA at his VAMPY Physics class. (Doug is the father of another long-time and current VAMPY teacher Dennis Jenkins. Read about Dennis’s start with The Center as Head Counselor on page 4.) Kenny accepted so he could watch Doug teach and learn from his example. “It was a bonus to interact with the students,” says Kenny, “I was amazed by how quickly they learned and understood the material.” Kenny took over as the instructor of the class 12 years ago, and today remains amazed by the students and how well they absorb the material.

Tracy became a VAMPY teacher in 1990 when one of the leaders at a National Endowment for the Humanities program in which she was a part, The Dante Institute, recommended her to Julia Rob-
erts. This summer was Tracy’s 23rd year teaching in VAMPY (with time off from 1992-1995 to earn her Master’s and have children). And after all this time, she is still able to say, “VAMPY is the highlight of my year!”

Tracy, Kenny, and Ron all agree that one of the main differences between their students when they started teaching and today is the access to the internet and how that helps them arrive at class better prepared to ask questions. Ron explained, “Students are so much more sophisticated than even a decade ago. They have, thanks to the Internet, instant access to much of recorded information, and they utilize it on a daily basis.” Ron sees that VAMPY today involves more students and offers more classes, with meticulous planning and thought going into every component of camp.

Both Tracy and Kenny concur. “Now nearly all the students come to class loving physics, and they have particular disciplines that they have studied,” Kenny says. Tracy sees how social media has revolutionized communication and learning and allows her students to stay close throughout the school year or throughout their lifetimes.

One of the rewards of teaching for so many years is watching the progression of their past students. Kenny had several VAMPY students take a demonstration from class and turn it into an award-winning science fair project. And students will often tell him that they majored in physics or engineering in college and that his class helped them in their decision. Tracy is especially able to follow her past students through her job as Associate Director of The Center.

A common thread among the three teachers is how much they look forward to teaching VAMPY each summer. Tracy says: “VAMPY is the nirvana of teaching: incredible students with a passion for learning; ample periods of time to design creative and thought-provoking learning experiences; the opportunity to explore concepts and subjects I love; and the opportunity to instill that love in others.” Kenny echoes the same sentiments: “I have greatly enjoyed teaching VAMPY, and look forward to it as each summer approaches.” Ron adds, “I, like the students, look forward to VAMPY each summer. It is literally a teacher’s utopia to have the opportunity to teach a subject which I feel passionately about to such a wonderful group of young people. Julia and Dick Roberts make gifted and talented education their way of life, and it is what they enjoy.”

Note: Ron Skillern currently teaches Nazi and the Holocaust; he recently retired from teaching at Bowling Green High School. Kenny Lee teaches Physics at VAMPY; he is a physics teacher at Warren Central High School. Tracy Inman teaches Humanities in VAMPY; today she is the Associate Director of The Center for Gifted Studies.
Practicum Experience = Teaching at SCATS

In 1984, the first graduate classes in gifted education were offered at WKU, and the twelve-graduate hour sequence has been offered each year since then. The final class in the four-class sequence provides the opportunity for educators to spend two weeks teaching a topic of the practicum teacher’s choice to two classes of middle school students in grades 6 to 8 during the Summer Camp for Academically Talented Middle School Students (SCATS). They also observe other classes and participate in sessions to discuss what they are learning about young people with gifts and talents and strategies to address their cognitive and social-emotional needs with professors Julia Roberts and Nielsen Periera. As the word 
practicum suggests, these educators are engaged in learning in a real-life setting – they are learning as they teach students who are advanced and who are learning in classes of their choice.

When asked about whether the practicum experience matched their expectations, here are practicum teachers’ responses:

Kara Westerfield, elementary music teacher and technology coordinator in Daviess County Schools: “It was no secret how nervous I was as an elementary music teacher to be teaching gifted middle school students. By the end of my experience, I was pleasantly surprised to find myself considering teaching SCATS again next summer! The students are so enjoyable. The staff was absolutely amazing at meeting whatever odd request you asked of them. The camaraderie of fellow practicum members provided comfort, instructional ideas, and laughs!”

Laureen Laumeyer, elementary social studies and writing teacher in Hardin County Schools: “The practicum exceeded my expectations because it provided me with an environment in which gifted and talented children had an opportunity to interact with each other on an academic, social, and emotional level. It allowed me to see the levels to which these bright minds could aspire when not held back by the traditional classroom.”

Anita Laney, gifted and talented teacher in the Ashland Independent Schools: “SCATS was a wonderful experience! The best aspect of the practicum was discussing scientific phenomena with the students. These students could make connections within content without being probed or questioned about their learning. I enjoyed teaching every day and could not wait to see where student learning would go that day.”

Gina Poore, gifted education teacher and college readiness coordinator in the Clinton County Schools: “My involvement with the practicum has truly renewed my faith in education and reignited my passion for teaching. Every day and every class was consumed with ‘Ah-ha’ moments. The student’s sincere desire to acquire knowledge stemmed from their authentic love of learning. My experiences working with the students have truly changed my professional life because it has reaffirmed my belief that teachers have the awesome responsibility to guide students in their journey of discovery.”

Learning characterizes the practicum experience, including learning for the teachers and the middle school students. These 30 hours of teaching linked with 30 hours of observing other classes is a valuable experience for all involved.
Every year, around 30 United States History teachers come to WKU to attend the Advanced Placement Summer Institute. They come from far and wide to either get first time professional development in a beginners course so they can teach a new subject or to hone their skills in an experienced course. So why did attendance this year more than double when 65 teachers attended?

“Very large changes,” answered Advanced Placement Consultant Chris Averill. “These changes were found in both the curriculum and in the AP U.S. History test.” The College Board has been upgrading and updating the Advanced Placement curriculum and tests for each subject in a yearly rotation. For the 2014-2015 school year, AP U.S. History was the focus, with AP Seminar, AP Physics 1, and AP Physics 2 also seeing changes.

“The new curriculum is nearly 90 pages long and is much more granulated than the 10-page traditional AP curriculum which gave only broad topics and themes,” Chris explained. Chris has been an AP U.S. History teacher for 23 years and has been actively involved in the AP U.S. History reading for 18 years, with his roles including reader, table leader, and exam leader.

Each year, The Center for Gifted Studies has two consultants for U.S. History, one for the beginner course and one for the experienced course. Due to the increase in demand this year, The Center employed three consultants. Bill Polasky and James Sabathne joined Chris at the Summer Institute.

“The changes are profound and require attendance at a summer institute to develop a deeper understanding of their
These quotes were received anonymously from surveys given at the end of the AP Summer Institute:

I received a great deal of important and helpful resources and materials. I feel much better prepared to tackle the course redesign following this Institute.

I feel way more confident and ready to embrace the challenge of AP U.S. History.

I really enjoyed the AP U.S. History Institute. I found it very beneficial in preparing me for the redesigned AP U.S. History course.

All three U.S. History consultants worked together to make sure the needs of all AP U.S. History teachers were met.

meaning and implications for classroom teaching,” Chris said. “The curriculum is now intended to give guidance to build historical thinking skills.” According to the College Board’s website, “historical thinking skills include chronological reasoning, comparing and contextualizing, crafting historical arguments using historical evidence, and interpreting and synthesizing historical narrative, which are valued by college and university history departments.”

The curriculum is not the only aspect that was changed this year. The exam received major changes as well. “The ‘legacy’ exam (or the old exam) included multiple choice, student responses to two ‘free response questions,’ and an essay called a DBQ or Document Based Question,” stated AP Consultant James Sabathne. In 2012, James, who currently teaches history at Hononegah High School in Rockton, Illinois, was appointed by the College Board to help rewrite the AP test for AP U.S. History. “The exam now includes what is called a short answer section which is new. These items call for students to accomplish multiple brief tasks to demonstrate their historical knowledge and skills.” The chart to the left gives an overview of the changes.

These changes may be a lot to handle for teachers; but, as evidenced by some of the statements made from the participants, the WKU AP Summer Institute helped guide them in the right direction. “I thought James Sabathne, our consultant, as well as the other consultants we met, were extremely knowledgeable in the AP U.S. History course material as well as in the redesign of the AP program,” stated Bowling Green High School history teacher Jonathan Vaughn. “As far as the changes the College Board made to the test, I think they will help push teachers in some new directions of teaching and will help challenge students to think and be engaged in ways they may not have been in the past.”

The College Board has announced that AP Art History, AP European History and AP Research will be changing for the 2015-2016 school year. The Center for Gifted Studies will host the 32nd annual Advanced Placement Summer Institute June 22-26, 2015, and European History and U.S. History will both be offered again next year.

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<th>Section 1</th>
<th>Section 2</th>
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<td>Current Exam</td>
<td>80 multiple-choice questions (55 minutes/50 percent)</td>
<td>1 document-based question</td>
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<td>2 free-response questions (130 minutes/50 percent)</td>
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<td>Redesigned Exam</td>
<td>55 multiple-choice questions (55 minutes/40 percent)</td>
<td>1 document-based question</td>
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<td>4 short answer questions (45 minutes/20 percent)</td>
<td>(60 minutes/25 percent)</td>
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<td>1 long-essay question (35 minutes/15 percent)</td>
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AP U.S. History Course and Exam Frequently Asked Questions.
The 21st World Conference of the World Council for Gifted and Talented Children will be held in Odense, Denmark, August 10-14, 2015. The international headquarters of the World Council is located at WKU. Julia Roberts is one of seven members of the Executive Committee, and Tracy Harkins is the Executive Administrator for the organization.
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Fall Super Saturdays
November 1, 8, 15, & 22, 2014

Twice-Exceptional Learner Seminar
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Winter Super Saturdays
February 7, 14, 21, & 28, 2015

IdeaFestival Bowling Green
March 20, 2015

Travel to England
May 24 – June 3, 2015

The Summer Camp for Academically Talented Middle School Students (SCATS)
June 7–19, 2015

The Summer Program for Verbally and Mathematically Precocious Youth (VAMPY)
June 21 – July 11, 2015

Advanced Placement Summer Institute
June 22–26, 2015

Camp Explore
July 6–10, 2015

Camp Innovate
July 13–17, 2015