

AIMS TIMES

MURRAY STATE UNIVERSITY

Volume 15, Issue 1

January 2015

DIRECTOR'S CHAIR



Happy New Year AIMS Family!!

I pray that each of you have started the year off on the right note!!! We have several exciting things planned for 2015. Make sure to pay attention to the schedule of activities. If you have not turned in your grade reports, please do so

ASAP to either Stephen or Evan. We want to make sure that you are doing well in all of your classes. Online tutoring with live tutors is still available! Take advantage of this free service!

In February we will be celebrating National TRIO Day! We will be hosting a reception on campus in honor of this great day. In addition, the state-wide TRIO Day 2015 celebration will be held at Eastern Kentucky University on February 27-28, 2015. So far I have two students who have signed to compete on the quick recall Scholars Bowl Team. I am looking

for two more to represent AIMS at ECU. We are also eligible for two teams....so if there are at least an additional four other students interested we can set up a second team!!! Contact us ASAP if interested.

Stay warm and work hard in school! See you soon at an upcoming workshop or during a visit to your school!

Sincerely,

Dr. Doris Clark-Sarr

ADMINISTRATIVE PONDERINGS

Hello All!

I just don't know what to say....2015 is here!!!

I did not make a resolution to diet this year; but instead, I made a resolution to have a good year and help others to have one also.

I don't have much to say, just that the AIMS Summer Component will be here before you know it. If you have any paperwork completed, send it on in, what are you waiting on.?

Take care of yourself & others!

Sincerely,

Gail Woolhidge

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COORDINATOR’S CORNER—AIMS I

Happy New Years AIMS!
 I can’t believe 2014 is history and 2015 is already off to a wild and crazy start. For the first time ever, I managed to take a birthday vacation and I had a blast! I’m a bit older, maybe wiser, but definitely energized and ready to work with the kids!
 I know that we will all blink and the Summer Component will be here! Now is the time to begin finishing the puzzle. Lots of new and exciting adventures in the works for you! And lots of new AIMS Family members to acclimate into the program!
 Seniors, as the Bridge

Component approaches all I can continue to say is, “deadlines, deadlines, deadlines.” You must have all of your applications and forms completed in order for your college experience to be successful; Admissions, Financial Aid, Scholarships, Housing, etc. I can say this a million times, but only you can make sure it gets completed. We want each of you to take advantage of every opportunity afforded to you so please let us know if you need help with any of the process.
 As I reflect on the past year I look to the future and think,

“What can I do better? What will make this life more meaningful? What is my gift to the world?” The answers for these questions are my resolution and AIMS entails a large portion of those answers. Every student we help succeed is a small battle won. I pray our continued success with this great program and I also hope the students continue to take advantage of all we have to offer. Thank you for allowing me to be a small part of this great journey.
 Sincerely,

Stephen D. Keene

COORDINATOR’S CORNER—AIMS II

Happy New Year!

I hope everyone had a wonderful Holiday break with family and friends. I did, but I am glad to be back in the AIMS office!

The beginning of a new year is always a good time to reflect. I hope you take time to reflect on 2014. Maybe you didn’t study as much as you should have or receive the grades you hoped for. Perhaps you wish that you would have participated in a few more extracurricular activities or clubs. Now is a great time to make those changes! Nothing will ever change unless YOU take action – you can do it and the AIMS staff is here to help in every way that we can!

I have a few upcoming school visits scheduled and I look forward to seeing all of my current students. Second quarter grade reports are coming out so be on the lookout for a letter in the mail regarding those.

As always, contact me if you need anything at all –big or small!

Sincerely,

Evan O’Neal



CAREER PROFILE: Explainer: What is a gene bank? By Kathiann Kowalski

Scientists have begun storing reproductive tissues — seeds or eggs and sperm — in banks around the world

People save money in banks, in case of an emergency. Genetic banks serve a similar purpose for farmers and scientists who work to conserve rare plants and animals. Researchers or farmers can [WITHDRAW](#) samples from these “gene” banks to help rebuild populations of rare plant varieties and animal breeds or to help increase genetic diversity within species.

Gene banks also preserve cells or organisms that host unusual gene *variants* — genes with special traits. Those genes might later prove useful when some disease epidemic strikes, when the climate changes or when other factors threaten the survival of plants or animals. Farmers could use the banked deposits — stored cells or tissues — to restore genetic diversity or to introduce traits from other breeds or varieties.

Some gene banks house millions or even billions of plant seeds. One example: the Svalbard Global Seed Vault. It’s located underground on a remote island north of Norway. The San Diego Institute for Conservation Research houses another project, called the Frozen Zoo. Its collection includes cells from thousands of birds, reptiles, mammals, amphibians and fish. The cells stored there might one day be used to help rebuild populations of endangered species.

The Smithsonian and SVF Biodiversity Preservation Project in the United States freezes semen and embryos from rare breeds of domestic animals. The U.S. Department of Agriculture’s Agricultural Research Ser-

vice (ARS) has an even bigger program. It has almost a million [SAMPLES](#) of semen, blood and embryos from both common and rare breeds. Such collections serve “as a backup to the United States’ livestock industry,” explains Harvey Blackburn. He’s an animal geneticist. He also manages the National Animal Germplasm Preservation Program at an ARS lab in Fort Collins, Colo.

Gene banks use low temperatures to stop chemical and biological activity that might break down cells. Some banks freeze material in liquid nitrogen at -196° Celsius (-320.8° Fahrenheit). This freezing process replaces water in cells with another fluid, such as glycerol. That fluid minimizes the development of ice crystals. Such crystals could damage cell walls. Later, during thawing, biologists will remove the glycerol or some other fluid and return water to the cells.

Freezing and thawing cells has to be done quickly and carefully so that the material will still be *viable* after it has warmed back up. But some material requires extra special care.

The sperm from chickens and other poultry, for instance, do not survive the freezing and thawing cycle as well as does the sperm from cows and other mammals. Bird biology partially explains why, says Julie Long. A physiologist, she studies animal reproduction at an ARS lab in Beltsville, Md. Unlike female mammals, hens store sperm for several weeks after a single mating. Then they use those sperm over time to fertilize eggs. So thawed sperm must be very hardy to last such a long while in the female bird’s reproductive tract, she explains.

The shape of the frozen material also can affect how well it survives freezing. Bird sperm looks like a piece of string. That shape makes it more fragile than the sperm of most mammals, which contain a round head and slender tail. Ice crystals can more quickly damage DNA in a bird’s sperm.

But Long and other researchers are working to make the sperm of birds more resilient. “Bird sperm seems to respond better to a very fast freeze,” such as a 200° C drop in one minute, notes Long. That’s more than three times as fast as the freeze rate necessary to preserve the sperm of mammals.

The liquid in which the material is stored also is important. For example, freezing removes some chemicals from the membrane that surrounds the sperm cells from poultry. Those compounds had been important. They helped the sperm cell recognize an egg. Adding certain sugars and lipids to the solution in which bird sperm are stored may replace the lost chemicals, Long says. Altering the protective fluid and freezing solution also may improve a sperm cell’s survival — and fertility. Long’s team reported promising research with turkey sperm in December 2013 and again in June 2014 in the journal *Cryobiology*.




CAREER PROFILE: Explainer: What is a gene bank? (Continued) By Kathiann Kowalski



Deep-freeze tanks at the SVF Foundation's campus at Newport, R.I., hold a wealth of genetic material from rare

A gene bank can hold many different types of materials. There may be seeds that will grow into whole plants, or eggs and sperm that can be united to create an animal. Or there may be animal embryos, which can be implanted into [SURROGATE](#)

[MOTHERS](#) . Some gene banks store stem cells, which scientists may one day use to produce eggs and sperm. Banks can even store repro-

ductive organs, such as ovaries and testes. After thawing, these organs can go into animals of other breeds or even other species. Later, when mature, these organs will produce sperm or eggs with the genes of the animal from which they had been harvested.

Gene banks are a backup for the future, but they've already proven useful. In 2004, for instance, SVF took a few frozen embryos from a rare

breed, the Tennessee fainting goat, and implanted them into a more common Nubian goat. That work produced Chip, known as "Chocolate Chip" at birth. Chip proved that the process could work, and now he's a sign of hope for rare breeds.

JANUARY BIRTHDAYS

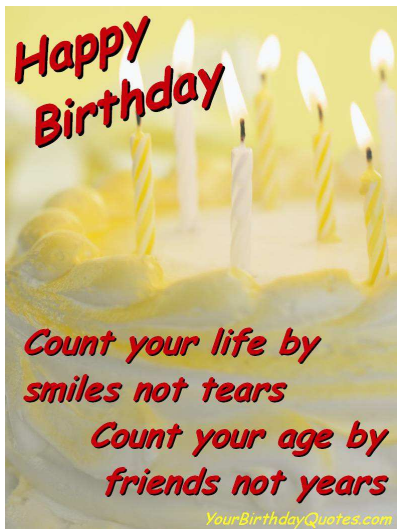
DANIEL GORDON

GAUGE HEADY

DEMARCO JOY

STEPHEN KEENE

JANAE MARTIN



PARENTS' CORNER: The Benefits of Parent Involvement: What Research Has to Say

Researchers have evidence for the positive effects of parent involvement on children, families, and school when schools and parents continuously support and encourage the children's learning and development (Eccles & Harold, 1993; Illinois State Board of Education, 1993). According to Henderson and Berla (1994), "the most accurate predictor of a student's achievement in school is not income or social status but the extent to which that student's family is able to:

1. Create a home environment that encourages learning
2. Express high (but not unrealistic) expectations for their children's achievement and future careers
3. Become involved in their children's education at school and in the community (p. 160)

Henderson and Berla (1994) reviewed and analyzed eighty-five studies that documented the comprehensive benefits of parent involvement in children's education. This and other studies show that parent involvement activities that are effectively planned and well implemented result in substantial benefits to children, parents, educators, and the school.

Benefits for the Children

- Children tend to achieve more, regardless of ethnic or racial background, socioeconomic status, or parents' education level.
- Children generally achieve

better grades, test scores, and attendance.

- Children consistently complete their homework.
- Children have better self-esteem, are more self-disciplined, and show higher aspirations and motivation toward school.
- Children's positive attitude about school often results in improved behavior in school and less suspension for disciplinary reasons.
- Fewer children are being placed in special education and remedial classes.
- Children from diverse cultural backgrounds tend to do better when parents and professionals work together to bridge the gap between the culture at home and the culture in school.
- Junior high and high school students whose parents remain involved usually make better transitions and are less likely to drop out of school.

Benefits for the Parents

- Parents increase their interaction and discussion with their children and are more responsive and sensitive to their children's social, emotional, and intellectual developmental needs.
- Parents are more confident in their parenting and

decision-making skills.

- As parents gain more knowledge of child development, there is more use of affection and positive reinforcement and less punishment on their children.
- Parents have a better understanding of the teacher's job and school curriculum.
- When parents are aware of what their children are learning, they are more likely to help when they are requested by teachers to become more involved in their children's learning activities at home.
- Parents' perceptions of the school are improved and there are stronger ties and commitment to the school.
- Parents are more aware of, and become more active regarding, policies that affect their children's education when parents are requested by school to be part of the decision-making team.



PARENTS' CORNER: The Benefits of Parent Involvement: What Research Has to Say (Continued)

Benefits for the Educators

- When schools have a high percentage of involved parents in and out of schools, teachers and principals are more likely to experience higher morale.
- Teachers and principals often earn greater respect for their profession from the parents.
- Consistent parent involvement leads to improved communication and relations

between parents, teachers, and administrators.

- Teachers and principals acquire a better understanding of families' cultures and diversity, and they form deeper respect for parents' abilities and time.
- Teachers and principals report an increase in job satisfaction.

Benefits for the School

- Schools that actively involve parents and

the community tend to establish better reputations in the community.

- Schools also experience better community support.
- School programs that encourage and involve parents usually do better and have higher quality programs than programs that do not involve parents.

KY TRiO DAY & STUDENT INITIATIVE COMPETITIONS 2015!

TRiO Day 2015 will be at Eastern Kentucky University on February 27-28, 2015.

Scholar's Bowl is a quick recall team competition for Upward Bound and Upward Bound Math & Science Students. Each competition consists of a round robin format with multiple rounds lasting 30 minutes or 60 questions, whichever comes first. The competition is designed to award first, second & third place team awards as well as pick the KAEOPP All-Star team for the SAEOPP Regional Scholar's Bowl Competition.



Your High School Classes Will Open the Doors to College

Because you are planning to go to college, it's important you take the right classes in high school. Beginning in ninth grade, the majority of your classes should be ones that will prepare you for admission to and, perhaps even more importantly, success in college. When it comes time to apply to college, you want to make sure you meet the admission criteria for ALL colleges in which you are interested. Always remember it is much better to be "over prepared" than "under prepared."

Here's what you need by the end of your senior year in order to meet the admission expectations at a majority of colleges:

Four full years of English classes. This includes courses in which you study writing and courses in which you read literature. Colleges know you need to be able to write well in nearly every career. You need to be able to read and analyze, and you need to develop strong communication skills!

Four full years of math classes.

Students who take math in each year of high school are far more successful in college than students taking only three years. Math is the tool you will use for many other classes, especially those in science. Your math classes should include at least four of the following six classes, taken in this order:

- Pre-algebra
- Algebra
- Geometry
- Algebra II and/or Trigonometry
- Pre-calculus
- Calculus

Never "skip" a year of math in high school because you will lose your momentum. If you do not take math in your senior year, you will find that the math classes required in college will be very difficult!

Three to four years of laboratory science classes.

You will have the strongest background if you have taken at least one year each of:

- Biology
- Chemistry
- Physics

Two years, at a minimum, of social sciences. Most college freshmen studied World History and US History in high school. Other social science options include:

- Government
- Sociology
- Geography
- Psychology

Two to four years of foreign language. More and more colleges are requiring a minimum of two years of language study while in high school, as an admission cri-

terion. Because many colleges require students to study a second language, it is important that you expose yourself to the study of languages while in high school.

A small number of colleges require one year of **visual or performing arts** prior to admission. Participation in these classes throughout high school can help you develop a "special talent" that will make you a highly qualified applicant.

Most colleges require students to meet certain college prep curriculum standards, but just meeting the minimum is not necessarily the best way to prepare for college. Strong preparation means going beyond the minimum—allowing you to start your college career in college-level courses, not remedial courses designed to help you catch up or review high school material—for NO CREDIT!

Athletes: Make sure you work with your counselor and coaches so your classes meet the standards of the [NCAA Eligibility Center](#).

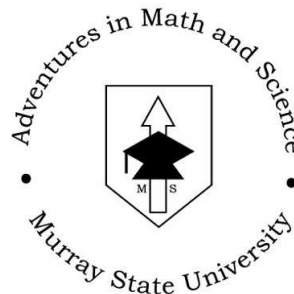
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SCHEDULE AT-A-GLANCE

January

17 Bridge Workshop
III 9:00am—1:00pm
Room 251 Blackburn Science Bldg

February

Summer Staff Interviews
TBD

10-13 43rd SAEOPP Annual Conference in Biloxi, MS

13 Blind Boys of Alabama Concert @ WKCTC

22 Stephen Keene & Friends Gospel Concert @

Badgett Playhouse

27-28 TRiO Day and Scholars Bowl @ EKU

March

Summer Hire Offers—TBD

1—2 Selma Movie @ MSU Lovett Auditorium

7 Bridge Workshop IV
9:00am—1:00pm Room 251 Blackburn Science Bldg

13 AIMS Application Deadline for Summer Component Consideration

16-20 MSU Spring Break

April

18 AIMS Orientation
9:00am—1:00pm 251 Blackburn Science Bldg