14th Annual Kansas City Regional
MATHEMATICS
TECHNOLOGY
EXPO

at the Richardson Science Center, Rockhurst University, Kansas City, MO
Friday and Saturday, October 1 and 2, 2004

Schedule of Events and Abstracts

Registration in the lobby of Richardson Science Center
Friday, 8:00 a.m. – 1:45 p.m., and Saturday, 8:00 a.m. – 1:00 p.m.

Complimentary continental breakfasts
Continental breakfasts are available both Friday and Saturday mornings in the registration area, sponsored in part by KAMATYC and AMATYC.

Lunches
Friday buffet and Saturday box lunches are both $7.50 apiece. Lunches were ordered with pre-registration, but there may be some available for purchase at the EXPO registration table.

Conference Lounge, Room 206
Friday, 10:15 a.m. – 3:30 p.m.; Saturday, 8:00 a.m. – 1:45 p.m.
Extra copies of handouts from talks will be placed in the Conference Lounge. Internet access is available.

Textbook, Hardware, and Software Exhibitors
Friday, 8:00 – 2:45 p.m.; Saturday, 8:00 a.m. – 1:00 p.m. (Not all exhibitors will be present on Saturday.)
Addison Wesley, MAA books, McGraw Hill, Prentice Hall, Hawkes Learning Systems, Wiley

Door Prizes will be given away following the Invited Address and the Keynote Address.

FRIDAY, October 1, 2004

Welcome and Introductions
Friday, 8:30 a.m.
Room 115

Richard Gill, 2004 EXPO Group Chair, Blue Valley High School, Stilwell, KS
Dr. Shirley Scritchfield, Dean of the College of Arts and Sciences, Rockhurst University, Kansas City, MO

SESSION 1 – Keynote Address
Friday, 8:30 a.m. – 9:50 a.m.
Room 115

Making Statistics and Probability Exciting and Dynamic – Using Freely Available Web Resources
Susan Holmes
Stanford University, Stanford, CA
www-stat.stanford.edu/~susan/

Probability and Statistics are ubiquitous in all sciences. I specialize in teaching both subjects to students from other disciplines, even artists. Teaching through the use of animations makes for lively interactions with students. It also enhances the learning experience since students that are following simulations in real time can see probabilities converge, following the law of large numbers. I will show some examples of animations I have created in Java to illustrate well known probability paradoxes, and I will show animations created by students in a course called *Scenarios for Statistics* (Statistical Computing for Artists). In that class, self-identified math-phobic students created flash animations to illustrate various statistical concepts.

Door prizes will be awarded directly following Susan Holmes' address.

SESSION 2
Friday, 10:00 a.m. – 10:45 a.m.

2A.   *Why SketchPad?*
Room 203 **Judy Roitman, University of Kansas, Lawrence, KS**
This talk will focus on the reasons for using Geometer's Sketchpad (or similar programs) in the geometry classroom. What happens when we use Sketchpad that wouldn't happen otherwise? What are the differences in how students learn geometry and what they learn? While the author's experience in using Sketchpad is restricted to the college situation (a geometry course designed for future high school and middle school teachers), her discussion applies to geometry courses in high school and possibly middle school. Simple activities will be demonstrated.
Presider: Libby Holmgren, Johnson County Community College, Overland Park, KS

2B.   *From Circles to Parabolas to Astronomical Telescopes*

Room 205   **Chuck Pheatt and Jorge Ballester, Emporia State University, Emporia, KS**
The authors have developed a hands-on web-based implementation of a physics experiment. Students are able to conduct a real experiment to gain familiarity with important mathematics concepts as well as computer-based data acquisition and analysis. This experiment concerns the light reflecting properties of parabolic and spherical surfaces. The presentation will include relevant mathematical analysis, computer animations, a hands-on activity and an on-line implementation.
Presider: John Soptick, Kansas City Kansas Community College, Kansas City, KS

2C.   *Using a Web-Based Writing Assignment Submission System in a*

Room 302   *Mathematics Course*
Michael Scott, Kansas State University, Manhattan, KS
Writing assignments in mathematics courses have become increasingly popular in recent years, and are especially important in a Standards-based curriculum. A writing assignment gives students an opportunity to reflect on their knowledge and the instructor an opportunity to obtain feedback on student understanding. However, some students don't seem to get as much out of writing assignments as others, and grading the assignments can be a grueling and time-consuming task for the instructor. Can technology be used to alleviate some of the burdens on the instructor while at the same time maximizing the benefits for both students and the instructor? Recently, I've created a web-based writing assignment program that addresses these issues. The system is similar to an online message board but contains built-in features especially made for implementing writing assignments.
Presider: Jacqueline Maxwell, Wellington-Napoleon R-IX High School, Wellington, MO

2D.   *Inferential Statistics and the TI-83+ Calculator*

Room 306   **Linda Hollingsworth, Northwest Missouri State University, Maryville, MO**
In an introductory statistics course, students sometimes miss the basic understanding of inferential statistics while they are trying to learn how to use their calculators. The TI-83 graphing calculator is the ideal calculator for a statistics student. This calculator not only has various inferential equations built in but also has built-in descriptive statistics features. This presentation will demonstrate the use of the TI-83$^+$ graphing calculator in the statistics classroom. We will explore the topics of hypothesis testing and confidence intervals on two independent means, matched pairs and, if time permits, proportions.
Presider: Brenda Reed, Lincoln University, Jefferson City, MO

SESSION 3   *Exhibitors*

Friday, 10:45 a.m. – 11:30 a.m.

Lobby and   This time is provided especially so that EXPO participants will have a chance to visit
Room 206   the Exhibitors in the lobby of the Richardson Science Center and also to visit the Conference Lounge, Room 206, where extra handouts from EXPO sessions will be located, and Internet access is available. The Exhibitors Area and the Conference Lounge will also be open at other times during the EXPO.

SESSION 4

Friday, 11:30 a.m. – 12:15 p.m.

4A.   ***Discussion: Mathematics Technology Explorations – Do Your Students***
Room 203 ***See What You See?***
**Moderators: Andy Bennett, Kansas State University, Manhattan, KS, and
John Koelzer, Rockhurst University, Kansas City, MO**
Technology can help students look at complex visualizations and explore mathematical ideas without getting lost in the calculational details. But seeing is a function of the brain as well as the eyes. Students may look at a demonstration and not see something that appears obvious to the instructor. This will only become a more pressing problem as online tools lead to more "learning" taking place outside the traditional classroom. How can we tell what our students are actually learning from technological tools? How can we judge when students are ready to explore different topics on their own? Please share your experiences (successful, unsuccessful, or uncertain) as we discuss how to deal with these issues.

4B.   ***Discussion: Writing and Sketching Mathematics – Which Technologies and***
Room 205 ***Techniques Are Effective?***
**Moderators: Marian VanVleet, University of Saint Mary, Leavenworth, KS, and
Tamatha Leuschen, Pembroke Upper School, Kansas City, MO**
Share the technologies your students are required to use for communication of mathematical ideas and the techniques that you use to promote effective writing and sketching. How and when do you incorporate technology? What standards do you have for student produced reports? Calculators, computers, or both – which are best for students? What calculators and/or computer programs have you found enhance your students' learning? Which ones have created more problems than they have solved?

4C.   ***Talk: A Student Perspective on an Internet Graduate Algebra Course***
Room 302 **Joe Yanik, Emporia State University, Emporia, KS; Richard Gill, Blue Valley High School, Stilwell, KS; C.J. Armenta, Blue Valley Northwest High School, Overland Park, KS; and Jana Goodman, Educational Director at the Leavenworth Federal Detention Center, Leavenworth, KS**
In the spring semester of 2004, Joe Yanik taught a graduate algebra class in which the primary interaction was over the Internet. Richard Gill, C.J. Armenta, and Jana Goodman were students in the course.   Joe Yanik will describe the course from the point of view of the instructor, while Richard Gill, C.J. Armenta, and Jana Goodman will contribute the student perspective. They will all describe advantages, disadvantages, and pitfalls of this method of delivery.
Presider: Patrick Cassens, Missouri Southern State College, Joplin, MO

4D.   ***EXPO Report on "Voices of the Partner Disciplines": What mathematics***
Room 306 ***and associated technology do our clients say their students need?***
**Richard Delaware, University of Missouri – Kansas City, Kansas City, MO;
Ken Eichman, Longview Community College, Lee's Summit, MO**
Have you ever wondered if you are properly preparing your students for the disciplines they intend to study? What mathematical preparation do those disciplines require? What preparation in the use of mathematical technology or software do they recommend?

To answer such questions, from 1999 to 2001 a series of 11 workshops were organized across the country by the MAA and printed together as a single volume, Curriculum Foundations Project: Voices of the Partner Disciplines, edited by Susan Gantner and William Barker, 2004. Each workshop consisted of 20 – 35 participants, most from the partner discipline under consideration, the others from mathematics who were there only to listen. The partners included biology, business and management, chemistry, computer science, four engineering fields, health-related life sciences, physics, statistics, teacher preparation: K-12 mathematics, and four technical mathematics disciplines. The participants were extremely grateful, and even surprised, to be invited by mathematicians to state their views about the mathematics curriculum. The results are enlightening.

As a service of the EXPO Group, we will introduce you to this MAA volume. (The biology workshop will be discussed at 1:30 p.m. in EXPO talk 5D below.) Photocopies of selections from the report will be provided. Copies of the entire volume will be available for purchase at the MAA table in the Exhibitor Area.
Presider: Uwe Conrad, Cowley County Comm. College – Wichita Campus, Wichita, KS

LUNCH
Friday, 12:15 p.m. – 1:30 p.m. in Massman Hall

SESSION 5
Friday, 1:30 p.m. – 3:15 p.m. for the 2 workshops
1:30 p.m. – 2:15 p.m. for the 3 talks

5A.
Room 125

The End of Certainty – A Non-linear Dynamics Flavor for Introductory Courses in Mathematics
Andreas Soemadi, Kirkwood Community College – Iowa City Campus, Iowa City, IA
Students realize, through their education in introductory courses of physics, that determinism is the essence in Newtonian mechanics. They learn about quadratic functions and composition of functions in College Algebra, Pre-Calculus and Calculus I. Following Robert May, we can introduce students to a [self] composition of a quadratic function to illustrate the basic ideas of "chaotic," nondeterministic systems. Using Mathematica, the orbits of points in the unit interval, under the influence of the iterations of a quadratic map, will be constructed. A complicated behavior of the orbit will occur. The cobweb, the bifurcation diagram, and Feigenbaum constants will also be addressed.
Presider: Jorge Ballester, Emporia State University, Emporia, KS

5B.
Room 203

WORKSHOP: Conic Sections Using Geometer's SketchPad
Andy Bennett, Kansas State University, Manhattan, KS
This workshop will lay out a unit of explorations of geometric properties of conic sections using Geometer's SketchPad. Applications to problems in communications and computer graphics will be included as well. The unit is suitable for students in high school geometry, with extension problems suitable for a course in college geometry. All materials will be provided in both hard-copy and electronic form as appropriate, with both short and long versions of the materials for each conic so teachers can readily adapt the materials to the needs of their particular classes.
Presider: Eric Hall, University of Missouri – Kansas City, Kansas City, MO

5C.	*WORKSHOP: Programming in Derive*
Room 205	**Timothy Comar, Benedictine University, Lisle, IL**

The speaker will introduce the basics of programming in Derive. Included will be Derive programming commands, construction of user-defined functions, and building user-defined packages. He will also address pedagogical benefits of Derive programming. Participants will create several routines ranging from elementary geometry to multivariable calculus and basic differential geometry.
Presider: Vincent Lempke, Central Community College, Columbus, NE

5D.	*What Mathematics Every Undergraduate Biology Student Should Know –*
Room 302	*A 2004 Report from the MAA*
	Anita Salem, Rockhurst University, Kansas City, MO; and
	Judy Dilts, William Jewell College, Liberty, MO

It is generally agreed that current research areas in biology are more quantitatively oriented. The pervasive presence of computers together with their ever-increasing computational power encourages biologists to apply statistical and modeling methods to analyze data that is collected in the laboratory or the field. Biologists overwhelmingly believe that the graphing calculator is not the tool of choice for biology students.   Technological tools must be capable of producing graphs that can be incorporated into printed and presentation documents. They must allow students to apply modeling techniques to large data sets and they must also support simulation of models that are stochastic, discrete or continuous. This session will report the findings of the Curriculum Foundations Biology Workshop that brought together nationally recognized biologists and mathematicians for the purpose of proposing mathematical and technical needs for future biology students. A report from this workshop can be found in a recent publication of the MAA: *Curriculum Foundations Project: Voices of the Partner Disciplines,* edited by Susan Ganter & William Barker, 2004.
Presider: John Soptick, Kansas City Kansas Community College, Kansas City, KS

5E.	*Teaching Proof With On-line Visual Logic Puzzles*
Room 306	**John Cigas, Rockhurst University, Kansas City, MO**

This talk introduces a variety of visual logic puzzles and how to use them to teach logic and proofs. It demonstrates various on-line programs for solving the puzzles and how to use these programs in the classroom. Students solving these puzzles not only get a better understanding of implication, logic, and proofs, they also end up with a pleasant picture as well!
Presider: Keith Brandt, Rockhurst University, Kansas City, MO

SESSION 6
Friday, 2:30 p.m. – 3:15 p.m.

6A.	*Calculus Group Projects Using Maple*
Room 125	**Brian Birgen, Wartburg College, Waverly, IA**

At Wartburg College we have developed a series of group projects, using Maple, which have been incorporated into our Calculus sequence. Students work in groups of four outside of scheduled class time on challenging problems. I will show a number of the projects and discuss some of the issues involved in managing a course with group projects. I will mention

using course management software, managing groups, overworked students, encouraging fellow faculty members to participate, and re-using problems from year to year.
Presider: Larry Long, DeVry University, Kansas City, MO

6B.
Room 302
CPS – Classroom Performance System
Robin Lerner, Blue Valley High School, Stilwell, KS
This demonstration will focus on the use of the CPS software. I will show the end result and, if time allows, show a little of how to set up the system. This is a great program to use when reviewing for exams or even the state assessment. It could also be used as a pre-test in some situations. It can be used in any level of math class and only requires a computer with a monitor large enough for everyone to see. The program encourages competition and the students really enjoy having a different way to review for a test.
Presider: Mark Whisler, Cloud County Community College, Concordia, KS

6C.
Room 306
XPPAUT: Dynamical System Analysis and Simulation
Mike Martin, Johnson County Community College, Overland Park, KS
XPPAUT is a unix-based program that merged the capabilities of the X-Windows Phase Plane (XPP) program and the popular Auto (AUT) bifurcation program. XPPAUT is a tool for solving differential equations, difference equations, delay equations, functional equations, boundary value problems, and stochastic equations. Although its use is by no means relegated to just biomathematics, it is the program of choice for most students and researchers in the field and was developed by Bard Ermentrout, a leading applied mathematician in the neurosciences. Since most biological systems have parameters that vary over healthy and pathological states, robust bifurcation programs are an imperative in the analysis of biological models. Participants of this session will get a brief tutorial on the use of the program, it's many features, and get a good idea of its potential in both education and research. XPPAUT is a freely downloadable program that can be configured to work on any contemporary operating system, including Windows & Mac OSX.
Presider: Chuck Pheatt, Emporia State University, Emporia, KS

POST-SESSIONS for KAMATYC and MOMATYC

Friday, 3:30 p.m.
Room 302   MOMATYC – informal meeting
Room 306   KAMATYC – informal meeting
(Interested KAMATYC and MOMATYC participants will go to supper together after the meetings.)

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SATURDAY, October 2, 2004

Welcome and Introductions
Saturday, 8:30 a.m.
Room 115
Richard Gill, 2004 EXPO Group Chair, Blue Valley High School, Stilwell, KS

SESSION 7 – Invited Address
Saturday, 8:30 a.m. – 9:50 a.m.
Room 115

Mathematics and Biology Education: Promoting Interdisciplinarity
Louis Gross
University of Tennessee, Knoxville, TN
http://ecology.tiem.utk.edu/~gross/

At the University of Tennessee – Knoxville, biology continues to become ever more quantitative. Students who wish to comprehend current theory, design and analyze new experiments, and utilize with understanding new technological tools, require more quantitative training than most obtain through formal quantitative courses. At the same time, students with strong interests in mathematics may not be exposed early in their education to the plethora of exciting opportunities to apply the quantitative methods they are learning about. How can we improve our curricular offerings? How can we help students to become "fearless users" of the new technologies?

Door prizes will be awarded directly following Lou Gross' address.

SESSION 8
Saturday, 10:00 a.m. – 11:45 a.m. for the 3 workshops
*   10:00 a.m. – 10:45 a.m. for the 2 talks*

8A.   ***WORKSHOP: Using the TI-83 to Explore Chaos: Cobweb Diagrams, the Logistic***
Room 125   ***Difference Equation, and the Bifurcation Diagrams***
             Richard Chilcoat, Wartburg College, Waverly, IA
             The TI-83 will be used to examine the results of iterating the logistic difference equation
             modeling the population of fish in a lake. A rather surprising result is that the population is
             very dependent on the interaction between the parameter values and the variable values.
             Chaos may result, but not always, and even in the midst of chaos we find that there is a
             pattern that emerges in the results. The TI-83 will be used to produce cobweb diagrams that
             show the orbit of the fixed point attractors, and also to run a program that will iterate the
             logistic difference equation very rapidly.
             Presider: Eric Hall, University of Missouri – Kansas City, Kansas City, MO

8B.	***WORKSHOP: EXCELing at Sequences and Series***
Room 203	**Suzanne Hunt, Johnson County Community College, Overland Park, KS**

We begin by generating sequences and series in EXCEL. Physically gesturing with the mouse to build formulas mimics how students often explain the relationships that they see. Both recursive and explicit formulas will be used. We will quickly graph the terms of our sequences and discuss the differences between the graphs of arithmetic and geometric sequences. The graph of a series will be generated for a discussion about convergence. A look back at the spreadsheets gives us a chance to introduce vocabulary and discuss patterns. This understanding of the mechanics serves as a foundation for learning notation such as a_n, d, r, and sigma notation. One of our sequences will be generated using data we will collect from a bouncing ball using a TI Calculator Based Ranger.

Presider: Vincent Lempke, Central Community College, Columbus, NE

8C.	***WORKSHOP: The Consumer Price Index, Inflation and Math – Using***
Room 205	***the Internet and EXCEL***
	Elizabeth Appelbaum, Community Liaison for Mathematics, Blue Valley Schools

If you had $500 in 1994, how much must you have in 2004 to keep your buying power? Find the answer, $625, in this workshop   using the online Inflation Calculator of the Bureau of Labor Statistics. Also, we download the Bureau's Consumer Price Index, 1913 to the present, to a spreadsheet, calculate the annual change as a percent (inflation rate), graph the inflation rate, and edit the graph for professional standards. We use an internet publication by the speaker about these topics in the *Journal of Online Mathematics and Its Applications.*

Presider: Cheryl Winter, Blue River Community College, Blue Springs, MO

8D.	***Computational Biology***
Room 302	**Susan Holmes, Stanford University, Stanford, CA**

Good sources of teaching materials for teaching computational biology are available on the web. I will talk about teaching computational biology using the web for animations and interesting datasets on HIV and cancer, some analysis of microarrays and how we illustrate the processes involved in these complicated experiments using multimedia materials.

Presider: Libby Holmgren, Johnson County Community College, Overland Park, KS

8E.	***Calculus for the Life Sciences: How Does It Rate?***
Room 306	**Mike Martin, Johnson County Community College, Overland Park, KS**

Mathematics plays a very important role in biology, biomedical research, and the biotechnology industry. Although a great deal of biology can be done without any mathematics, the powerful new technologies that are transforming fields of biology are increasingly quantitative and mathematical at their core. As a result, new approaches to conveying mathematics to aspiring biologists need to be developed and considered. The presenter has created and offers a new course, Calculus for Biology & Medicine, that addresses this need. Describing change, both continuous and discrete, is a running theme of the course and one that relies on the use of technology. Participants of this session will learn about curriculum reform of and technologies associated with mathematical biology at the early undergraduate level. Modeling techniques associated with primarily calculus, but also college algebra and trigonometry will be featured.

Presider: Patrick Cassens, Missouri Southern State College, Joplin, MO

Saturday, 11:00 a.m. – 11:45 a.m.

9A. ***Mastery Testing with Technology (Part 1)***
Room 302 *After lunch, Part 2 is offered as a workshop.*
Cathleen O'Neil, Nancy Carpenter, and Libby Holmgren,
Johnson County Community College, Overland Park, KS
The presenters will define what they mean by a mastery test and describe the nuts and bolts of developing and administering the tests using inexpensive, off-the-shelf software to generate new versions of tests on demand. The presenters have developed software templates for mastery tests in introduction to algebra, intermediate algebra, college algebra, and calculus. The presenters will share how they handle the proctoring and scoring of the tests and different ways the results are used in student evaluations. Hear some individual stories of how the mastery tests turned things around for students.

Though the presenters use Scientific Notebook to create their mastery tests, this first session is a general information session on mastery testing with technology. It is not necessary that participants have Scientific Notebook, or intend to use the program.
Presider: Kent Craghead, Dodge City Community College, Dodge City, KS

9B. ***Using Mathematica in an Integrated Mathematics/Biology Course***
Room 306 ***– A Preliminary Report***
John Koelzer (Mathematics) and George O'Connor (Biology),
Rockhurst University, Kansas City, MO
The presenters will describe a course entitled *Mathematical Modeling in Biology,* to be team-taught for the first time in the spring semester of 2005. The goal of the course is to present the students with a broad range of mathematical biology models and applications of these models to real world problems.   The presenters – one a mathematics teacher and the other a biology teacher – will describe several of the topics to be covered in the course and will demonstrate how *Mathematica* and other software tools will be used in the course to develop the underlying concepts.
Presider: Andreas Soemadi, Kirkwood Community College – Iowa City Campus, Iowa City, IA

LUNCH
Saturday, 11:45 a.m. – 1:00 p.m. in Massman Hall

Saturday, 1:00 p.m. – 1:45 p.m.

10A. ***Current and Future Challenges in Mathematical and Computational Biology***
Room 115 **Louis Gross, University of Tennessee, Knoxville, TN**
How have mathematics and computational science contributed to our knowledge of biological systems? First we will discuss biocomplexity, illustrating with audience participation how simple models can lead to non-intuitive results. We will then proceed to show, using ongoing research in ecology, how models can summarize data, contribute to

understanding, enhance success in managing natural systems, and promote an open scientifically-based approach to public policy decisions. Examples will wend through Everglades restoration, black-bear/human interactions, control of antibiotic resistance, ramps (wild leeks), and the Florida panther.
Presider: Uwe Conrad, Cowley County Comm. College – Wichita Campus, Wichita, KS

10C.
Room 203

WORKSHOP: Mastery Test Creation with Scientific Notebook
(This is Part 2 of the Mastery Testing sessions at the 2004 EXPO.)
Cathleen O'Neil and Nancy Carpenter,
Johnson County Community College, Overland Park, KS
This is a quick hands-on workshop on how to modify a *Scientific Notebook* exam template to create your own mastery test. Participants will receive a copy of "The Quick and Dirty Guide to Creating Your Own Tests in *Scientific Notebook*" and a CD with test templates to get you started.
Presider: Kent Craghead, Dodge City Community College, Dodge City, KS

10D.
Room 205

A SketchPad Project for Future Elementary School Teachers
Timothy Comar, Benedictine University, Lisle, IL
Many of the students in the Mathematics for Future Elementary School Teachers course come into the course with a weak background in geometry and little understanding of connections between geometry and other mathematical topics. Moreover, few of the students, if any, have experience with dynamic geometry software. The culminating activity in the course is a project using *The Geometer's Sketchpad* to create several exploratory activities designed for use in elementary school classrooms. In this presentation, I will describe the nuts and bolts of the assignment as well as how this assignment allows for the students to take ownership of the mathematical material and begin to shift their roles from that of the student-learner to that of the teacher-learner.
Presider: Michael Scott, Kansas State University, Manhattan, KS

10E.
Room 306

Space Shuttle Mathematics
Vincent Lempke, Central Community College, Columbus, NE
This is an informative talk about the space shuttle and mathematics. It contains descriptive items and mathematics of the shuttle preparation, launch, orbit, and re-entry. The mathematics will range from geometry to differential equations, including demonstrations. I will have one of the heat tiles from the shuttle as part of the presentation. Problems presented can be solved using spreadsheet software and/or the TI-89.
Presider: Larry Long, DeVry University, Kansas City, MO

The 2004 EXPO Group

- **Richard Gill** (2004 Chair), rgill@bv229.k12.ks.us
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- **Carl Anderson**, canders33@yahoo.com
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- **John Koelzer** (Site Coordinator & 2004 Financial Secretary), John.Koelzer@rockhurst.edu
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- **Tamatha Leuschen**, tleuschen@pembrokehill.org
  Pembroke Hill Upper School, Kansas City, MO

- **Marian VanVleet** (1999 - 2003 Chair, 2004 Recording Secretary), vanvleetm@stmary.edu
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- **Joe Yanik**, yanikjoe@emporia.edu
  Emporia State University, Emporia, KS

Events/Activities in Kansas City:
www.kansascity.com