



# CSI:

# Calculus/Statistics Insider

*Official Newsletter of the Georgia Association of Advanced Placement Math Teachers*

Issue #22

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## Schedule for GA²PMT Annual Meeting at GMC Rock Eagle October 18, 2013

(Additional details provided on page 2)

	<b>GAS Room 1</b>	<b>GAS Room 2</b>	<b>GAS Room 3</b>
	<b>8:00-9:30</b> <b>Fun Activities for Calculus</b> – Sandy Burlingame Mountain Area Christian Academy	<b>8:00-9:30</b> <b>Using Simulation to Perform Inference for Experiments</b> Christine Franklin & Josh Tabor <i>In this session, learn about randomization tests, a modern alternative to traditional distribution-based tests.</i>	<b>8:00-9:00</b> <b>Sequences and Series</b> – Nurfatimah Merchant, The Westminster Schools
	<b>9:45-11:15</b> <b>Solving Calculus Problems: A Hands-on Session</b> – Marshall Ransom, Georgia Southern University & Chuck Garner, Rockdale Magnet School	<b>9:45-11:15</b> <b>Investigating the Conditions for Inference</b> Christine Franklin & Josh Tabor <i>In this session, explore the reasons why we have to check conditions for inference and what happens when these conditions are violated.</i>	<b>9:15-10:15</b> <b>Probability Checklist</b> – Chris Parker, Columbus High School
			<b>10:30-11:30</b> <b>Slope Fields and Differential Equations</b> – Loretta Cameron, Woodstock High School & Debbie Kohler, Kennesaw State
<b>11:30 – 12:15</b>	<b>Business Meeting and Luncheon</b> <i>To attend the free luncheon, you must be a current GA²PMT member.            Annual membership is \$10. On-site membership registration will be available.</i>		
<b>12:30 – 2:00</b>	<b>Report from the AP Calculus Reading</b> Provided by Marshall Ransom	<b>Report from the AP Statistics Reading</b> Provided by Lina Ellis, Jean Linner, & Josh Tabor	

## Meet Our Featured Presenters:

### Christine Franklin

University of Georgia, Athens, GA

*Christine Franklin is the Lothar Tresp Honoratus Honors Professor in Statistics at the University of Georgia and a Fellow of the American Statistical Association. Chris was the lead writer for the American Statistical Association (ASA) Pre-K-12 GAISE Framework that served as the basis for the statistics strand in the Common Core State Standards. Chris is a former AP Statistics Chief Reader and was honored in 2006 with the Mu Sigma Rho National Statistical Education Award. She has written two textbooks, including Statistics: The Art and Science of Learning from Data, co-authored with Alan Agresti, and Statistical Reasoning in Sports, co-authored with Josh Tabor, a textbook that supports the Common Core Standards in Statistics. Chris currently serves on the ASA-NCTM Joint Committee on Curriculum in Statistics and Probability for K-12. In May 2013, Chris was honored with the CAUSE/United States Conference on Teaching Statistics (USCOTS) biennial lifetime achievement award.*

### Josh Tabor

Canyon del Oro High School, Oro Valley, AZ

*Josh Tabor has been teaching AP Statistics since 1997, the first year the AP Statistics exam was offered. He currently teaches at Canyon del Oro High School in Oro Valley, AZ and was a top-5 finalist for Arizona Teacher of the Year in 2011. Josh has been a grader of the AP Statistics exam since 1999, a table leader from 2001-2006, and a question leader from 2007-2013. He has also served on the AP Statistics Test Development Committee from 2005-2009. Josh is the co-author of The Practice of Statistics 5e, the best-selling textbook for AP® Statistics, and the author of the Annotated Teacher's Edition for The Practice of Statistics 4e and 5e. He is also the co-author of Statistical Reasoning in Sports, an on-level statistics textbook that introduces students to the concepts of statistical reasoning in a simulation-based, student-friendly manner. Josh has been teaching one-day and week-long AP® Statistics workshops for many years and enjoys the opportunity to share his love of statistics as well as learn from the experiences of workshop participants*

## GA<sup>2</sup>PMT Rock Eagle Session Descriptions:

### **Title: “Using simulation to perform inference for experiments”**

*By Christine Franklin, University of Georgia, [chris@stat.uga.edu](mailto:chris@stat.uga.edu) and Josh Tabor, Canyon del Oro High School in Oro Valley, AZ*

#### **Description:**

In this session, we will learn about randomization tests, a modern alternative to traditional distribution-based tests. We will also discuss at least four reasons why you should incorporate them in your AP Statistics course. Examples include alternatives to the two-sample  $z$  test for a difference in proportions, a two-sample  $t$  test for a difference in means, and possibly others, depending on time.

### **Title: “Investigating the conditions for inference”**

*By Josh Tabor, Canyon del Oro High School in Oro Valley, AZ, [joshtabor@hotmail.com](mailto:josh_tabor@hotmail.com) and Christine Franklin, University of Georgia*

#### **Description:**

In this session, we will explore the reasons why we have to check conditions for inference and what happens when these conditions are violated. What if the sample size is too small? What if the sample is more than 10% of the population? Can we still perform inference if the conditions are violated?

**Title: "Fun Activities for Calculus"**

By Sandy Burlingame, Mountain Area Christian Academy, [candsb@windstream.net](mailto:candsb@windstream.net)

**Description:**

In this session, participants will explore several activities that show unique ways to explain calculus or give students fun ways that provide extra practice. These activities take little time on the part of the teacher and some can be used in other courses, as well.

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**Title: "Solving Calculus Problems: A Hands-on Session"**

By Marshall Ransom, Georgia Southern University, [mransom@georgiasouthern.edu](mailto:mransom@georgiasouthern.edu)  
and Dr. Chuck Garner, Rockdale Magnet School, [cgarner@rockdale.k12.ga.us](mailto:cgarner@rockdale.k12.ga.us)

**Description:**

Participants will be asked to solve, in small groups of attendees, five problems from AP Calculus. The problems will be monitored by the presenters. The problems will be discussed as participants work and each problem will be summarized as the session progresses. The problems and solutions, as well as comments about how they correspond to the AP Calculus Exam, will be available for each participant.

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**Title: "An Exploration of Series"**

By Nurfatimah Merchant, The Westminster Schools, [NurfatimahMerchant@westminster.net](mailto:NurfatimahMerchant@westminster.net)

**Description:**

This session makes connections within the AP Calculus BC series content that helps students retain and effectively apply what is perceived by them to be a large amount of challenging material. Topics covered include deriving power series with shortcuts, determining convergence intervals, and constant series convergence tests as tools for testing endpoints of a convergence interval. Time permitting, the LaGrange error bound and error bounds for alternating series will also be explored.

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**Title: "Checklist- A Guide to Solving Those Darned Probability Problems in AP Statistics"**

By Chris Parker, Columbus High School, [Parker.John.C@muscogee.k12.ga.us](mailto:Parker.John.C@muscogee.k12.ga.us)

**Description:**

In this session, we will look at several AP Statistics problems concerning probability and utilize a checklist of questions to better guide students in the solution process. Using an organized format of questions, participants will learn to employ more directed strategies for solving probability problems. Emphasis will be given on combining independent variables and understanding the Central Limit Theorem.

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**Title: "Slope Fields and Differential Equations"**

By Loretta Cameron, Woodstock High School, [loretta.cameron@cherokee.k12.ga.us](mailto:loretta.cameron@cherokee.k12.ga.us)  
and Debbie Kohler, Kennesaw State University, [adkohlers@yahoo.com](mailto:adkohlers@yahoo.com)

**Description:**

This session will explore techniques to aid in teaching slope fields in AP Calculus using technology, student focused manipulatives and activities. In addition, methods for helping students to discover how to be successful in solving differential equations will also be explored.

# **Proposed Slate of GA<sup>2</sup>PMT Officers for 2013-2015**

At our annual business meeting at Rock Eagle on October 18<sup>th</sup>, we will be voting on a new slate of officers to lead us for the next 2 years. Below is the list of officer positions. If you are interested in more information about a certain office, you can contact that person directly via email. If you would like to nominate yourself or someone else for an officer position, please contact Storie Atkins.

## **Proposed Slate of Officers for 2013 – 2015**

- President – Don Slater
- President-elect – Debbie Kohler
- Secretary/Treasurer – Storie Atkins
- 1<sup>st</sup> VP of Communications – Lina Ellis
- 2<sup>nd</sup> VP of AP Information – Wenona Young
- 3<sup>rd</sup> VP of Technology – Dennis Wilson
- Regional Representatives – Peter Anderson, Sal Angelica, Dean Goldgar, Nelda Hataway, Jeff McCamon,

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## **GA<sup>2</sup>PMT Constitution Revisions**

GA<sup>2</sup>PMT would like to become an affiliate of GCTM. In order for that to happen, our current constitution needs revisions to reflect some of the requirements needed for affiliation status. All revisions to the constitution require a 30 day review notice given to current GA<sup>2</sup>PMT members and a vote on revisions at our annual business meeting. Once the constitution has been revised, our affiliation can be voted upon at January's GCTM Board meeting. Please take a moment to review the proposed changes to the constitution, provided on pages 5-6.

# Constitution of The Georgia Association of Advanced Placement Mathematics Teachers

## Article I.

### **Name**

The name of the organization shall be The Georgia Association of Advanced Placement Mathematics Teachers (GA<sup>2</sup>PMT).

## Article II.

### **Purpose**

The purpose of GA<sup>2</sup>PMT shall be to foster and encourage the association of advanced placement mathematics teachers by keeping them informed about advanced placement programs, teaching strategies, technology applications, educational directions, and other mathematical topics of general interest.

## Article III.

### **Membership**

All persons interested in the purpose of the organization shall be eligible for membership. Members of this organization may not benefit in any monetary or other tangible way ~~be~~ by belonging to GA<sup>2</sup>PMT.

## Article IV.

### **Officers and Board of Directors**

**Section 1.** The officers shall be a President, a President Elect, three Vice-Presidents and a Secretary/Treasurer.

**Section 2.** The Board of Directors shall consist of the six officers and up to ~~four~~ six additional regional representatives of the membership.

**Section 3.** Duties of the President: The President shall preside at all meetings of GA<sup>2</sup>PMT and shall be the Chairperson of the Board of Directors. The President shall be an ex-officio member of every committee.

**Section 4.** Duties of the President Elect: The President Elect shall perform the duties of the President in the absence of that officer and shall have complete charge of the details and planning of all meetings.

**Section 5.** Duties of the Vice-Presidents: The First Vice-President shall be responsible for publishing the organization's newsletter. The Second Vice-President shall be responsible for informing members of current advance placement information. The Third Vice-President shall be responsible for informing members of current advancements in technology.

**Section 6.** Duties of the Secretary/Treasurer: The Secretary/Treasurer shall keep all records, have charge of all correspondence, pay all-invoices, collect all dues and charges, and keep records of all paid members. The Secretary/Treasurer shall submit a Financial Statement of Income and Expenses each year.

**Section 7.** Duties of the Board of Directors: The Board of Directors shall be responsible for the general planning of the activities of the organization, ~~and for the election of officers,~~ **for the election of officers, and for appointing a member as a non-voting representative to the GCTM Board.**

**Article V.**  
**Meetings**

**Section 1.** GA<sup>2</sup>PMT shall meet at least once a year at a time and place selected by the Board of Directors. One meeting shall be at the annual GCTM conference in October.

**Section 2.** The Board of Directors shall meet at least twice a year. One meeting shall be in the Spring and one meeting shall be in late Summer. The time and place of the meeting shall be at the discretion of the Board.

**Article VI.**  
**Annual Dues**

The annual dues shall be established and levied on the membership each year by the Board of Directors.

**Article VII.**  
**Election of Officers**

**Section 1.** The election of officers shall be held at the Annual Meeting of the membership in October during odd numbered years.

**Section 2.** The officers shall serve terms of two years in each office.

**Section 3.** The Board of Directors, at the summer meeting of each odd numbered year, will prepare a slate of officers from nominations received prior to the meeting. This slate will be presented to the members in the fall newsletter prior to the annual meeting. At that Annual Meeting the elected officers will assume their duties.

**Section 4.** Any vacancy occurring among the officers shall be filled by election by the Board of Directors. Any vacancy among the board representatives shall be filled by appointment by the President.

**Article ~~VIII~~ VIII.**

**Amendments**

This constitution may be amended at a GA<sup>2</sup>PMT meeting by a majority vote of the members present provided that notice has been given at least thirty days prior to that meeting.

**Article IX.**

**Dissolution**

In the advent of the dissolution of GA<sup>2</sup>PMT, the residual assets of the organization shall become property of the Georgia Council of Teachers of Mathematics (GCTM).

January 10, 1995

**Proposed Revision October 18, 2013**

## 2013 GaDOE AP Regional Workshops

To maintain our strong Advanced Placement program throughout the state, the Georgia Department of Education has planned for four ***Advanced Placement AP Regional***

### **Workshops for the fall of 2013:**

October 9, 2013 at Bainbridge High School, Decatur County

October 11, 2013 at Rockdale Career Academy, Rockdale County

October 15, 2013 at Cambridge High School, Fulton County

October 18, 2013 at South Effingham High School, Effingham County

As in the past six years, there is no registration fee. Specific courses offered at each workshop site are listed below. ***Each workshop is designed primarily for new AP teachers with 0-3 years of experience; however, any AP teacher who feels a need for a refresher course is welcome to register.*** Each course will be led by at least two highly successful Georgia high school AP teachers. There will be 30 seats available in each course area. The workshops will begin at 8:30 a.m. and conclude at 3:00 p.m. Lunch is not provided on-site but there will be ample time provided to buy lunch off campus.

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### **Teacher Registration for AP Regional Workshop**

Complete this information for Each AP Teacher registering for the 2013 Regional Workshops

Teacher's name:

Name of high school:

Name of principal:

Teacher's school email address:

Workshop Location for which the teacher is registering:

Workshop Date for which the teacher is registering:

Name of AP course for which the teacher is registering:

Name of AP course(s) teacher is currently teaching:

Number of years the teacher has taught this AP course(s):

***This page should be attached to an email from the high school principal to Bonnie Marshall at GaDOE [bmarshall@doe.k12.ga.us](mailto:bmarshall@doe.k12.ga.us)***

2013 AP Regional Workshops Course List by Site			
Wed, 10/9/13 Bainbridge High School	Friday, 10/11/13 Rockdale Career Academy	Tues, 10/15/13 Cambridge High School	Friday, 10/18/13 South Effingham High
AP Calculus AB AP Statistics	AP Calculus AB AP Calculus BC AP Statistics	AP Calculus AB AP Calculus BC AP Statistics	AP Calculus AB AP Statistics



**Results of survey taken at  
2012 GA<sup>2</sup>PMT Business Meeting**



1. On a scale of 1 – 10 (1=little importance and 10 = highly important), please rate the following benefits of GA<sup>2</sup>PMT membership:

	<u>little importance</u>					<u>highly important</u>				
	1	2	3	4	5	6	7	8	9	10
• GAAPMT annual mini-conference at Rock Eagle										<b>9.5</b>
• GAAPMT newsletter										<b>8.025</b>
• GAAPMT wiki										<b>7.54</b>
• GAAPMT webinars										<b>7.02</b>
• AP colleague connections										<b>9.31</b>

2. What services would you like continued or added to your GA<sup>2</sup>PMT membership? (circle your choice(s))

a.) High profile speakers at the Rock Eagle conference	<b>37</b>
b.) Summer workshop	<b>28</b>
c.) Better wiki collaboration	<b>14</b>
d.) Newsletter (annual or bi-annual)	<b>17</b>
e.) Webinars	<b>11</b>
f.) Other? <b>AP readers at Rock Eagle</b> <b>Facebook?</b>	

3. What topics would you like to see covered in future GA<sup>2</sup>PMT webinars, newsletters, or Rock Eagle mini-conference?

**Connection of CCGPS in statistics to AP**  
**Specific topics, not general**  
**Low scoring AP FR**  
**AP grade acceptance at college**  
**AP Statistics related**  
**AP MC tips/strategies**  
**Ideas on how to teach topics without**  
**chapter to chapter instruction**

**Hands on statistics ideas**  
**Fathom – Advanced techniques**  
**AP Calculus – Sequences and series**  
**Smart Board use/training**  
**Work through specific problems**  
**Tips for good AP scores**  
**Assessment**

4. If newsletters are continued, would you prefer a hard copy newsletter mailed to you as part of your membership or do you prefer it on-line?

**Hardcopy – 4**      **Both - 2**  
**Online – 29**      **None - 4**

5. Have you ever visited the GA<sup>2</sup>PMT wiki?    Yes    No  
**20**      **22**



## Check out additional resources at our GA<sup>2</sup>PMT Wiki – <http://gaapmt.wikispaces.com>

- ✓ Our bi-annual newsletters are on the Newsletter link.
  - ✓ GA<sup>2</sup>PMT presentations
  - ✓ News about the annual conference and other events is on the Professional Development page.
  - ✓ Links to other internet-based resources can be found in Electronic Resources
  - ✓ Find connections to other professional organizations
  - ✓ Make suggestions to improve GA<sup>2</sup>PMT by contacting your Officers
  - ✓ View recordings of webinars presented by GaDOE and GA<sup>2</sup>PMT
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## GA<sup>2</sup>PMT Membership Information

*The benefits of belonging to this organization can make a difference in your students' scores on the AP Exams. The information you get from the readers will help you better prepare your students for the AP Exams.*

### GA<sup>2</sup>PMT Membership Form (Oct. 1, 2013 – Sept. 30, 2014)

Name:			
School:			
Address:			
City, State, Zip:			
Telephone:			
AP Certification:	Calculus <input type="checkbox"/>	Statistics <input type="checkbox"/>	
Email:			
Member Status:	New <input type="checkbox"/>	Renewal <input type="checkbox"/>	

Please enclose a check for \$10.00 and mail to:  
GA<sup>2</sup>PMT  
ATTN: Storie L. Atkins  
P.O. Box 163  
Midland, GA 31820