# Mathematical Association of America
# Minicourse Proposal Form

1. *Information for the Primary Contact Presenter*:

   (a) *Name*: **Michael Posner**
   (b) *Affiliation*: **Villanova University**
   (c) *Address*: **(omitted from Sample)**
   (d) *E-mail Address*: **(omitted from Sample)**
   (e) *Telephone*: **(omitted from Sample)**
   (f) *Fax*: **(omitted from Sample)**
   (g) *Date:* **(omitted from Sample)**

2. *Names and Affiliations for any Additional Presenters*: **Carolyn Cuff, Westminster College**

3. *Specify the upcoming meeting for which you are applying*:
   ☒ Joint Math Meetings      ☐ MathFest

   Year: **20xx**

4. *Does the proposed minicourse require the participants to use a computer*?
   ☐ No          ☒ Yes

5. *Is this a request to repeat a minicourse that has already been offered or approved*?
   ☒ No          ☐ Yes

6. *Course Title*: **Teaching Introductory Statistics (for instructors new to teaching intro stats)**

7. *Course Abstract: (Note: This is the only information prospective participants will see. Thus, it should clearly articulate the content and goals for the minicourse, the format of the course, and any necessary prerequisite knowledge. Given space limitations, the abstract should not be more than 100 words in length.)*

**This mini-course exposes participants to the big ideas of statistics and the ASA-endorsed Guidelines for Assessment and Instruction in Statistics Education report. It considers ways to engage students in statistical literacy and thinking and contrast conceptual and procedural understanding in the first statistics course. Participants will engage in many of the classic activities that all statistics instructors should know. Internet sources of real data, activities, and best practices articles will be examined. Participants will find out how they can continue to answer the three questions by becoming involved in statistics education related conferences, newsletters, and groups.**

8. *Detailed Description: (Please include a list of topics to be covered and the approximate time spent on each topic. Also, indicate how the participants will be involved. Note: Minicourses*

*are scheduled for two, 2-hour sessions, on two different days; e.g., Monday and Wednesday, 9:00 – 11:00.)*

**Session 1:**
**Overview of GAISE (10 min) [Guidelines for Assessment and Instruction in Statistics Education]**
**Sampling/experiments (60 min) - Demonstration and participation in common classroom activities – "Random rectangles", "Sampling stars in the sky", "Random numbers", and "Fighting cancer with raspberries".**
**Graphics (45 min) – Activities include paper helicopter experiment and sugar cereals example. Some time will be spent talking about the AP exam and its utility in identifying good activities/questions/discussions.**

**Session 2:**
**Probability (40 min) – Simulations will be introduced using iPod shuffle activity and ESP example**
**Sampling distributions (20 min) – Sampling distribution applet (Rice/SOCR) activity demonstrated, Random rectangles revisited**
**Inference (40 min) – Confidence intervals demonstrated through Reese's Pieces activity, Hypothesis testing demonstrated through Roxy Peck's Cookie Game / Posner's psychic card trick.**
**Summary/resources (15 min) – A list of useful resources will be provided to participants**

9. *Special Logistical or Equipment Requests: (A computer projector and overhead projector will be provided; presenters are expected to bring their own laptops. Generally, rooms for minicourses are set up with tables and chairs facing the front.*
*List any special needs for the course, in terms of equipment or furniture set-up.)*

   **We will need internet access.**

10. *Biographical Sketches: (For each presenter, provide a brief bio, including information concerning the presenter's experience related to the proposed minicourse.)*

   **Dr. Michael Posner holds a bachelor's in statistics and economics from the University of Rochester, a master's in statistics from Carnegie Mellon University, and a doctorate in biostatistics from Boston University. He is currently an Assistant Professor in the Department of Mathematical Sciences at Villanova University in Philadelphia. Dr. Posner has been involved in a number of public health studies and researches making causal inference from observational studies through the use of propensity scores. He combines his research with his passion for teaching through his educational research work, both in improving STEM education and statistics education research. Dr. Posner is currently the past-chair of the Special Interest Group of the Mathematical Association of America on Statistics Education and an Executive Committee Member of the American Statistical Association's Section on Statistics Education.**

   **Dr. Carolyn Cuff's undergraduate degree in mathematics is from Westminster College, New Wilmington, PA. She holds a master's and doctorate from Case Western Reserve**

**University in Operations Research. Currently, she is Professor of Mathematics and Chair of the Mathematics and Computer Science Department at Westminster. Dr. Cuff was a member of the GAISE College Group, has chaired SIGMAA StatEd, served as a Council of Sections Representative for the ASA Section on Statistics Education, read AP Statistics exams for twelve years, and is currently on the joint committee of the ASA/MAA. She is a CAUSE advocate and has participated in reviewing and writing material for CAUSEweb.**

11. *Policy on Commercial Promotion*:
    *Whereas some minicourses will relate to commercially-available products, such as books or software, the promotion of such products in a minicourse is not appropriate. Participants in a successful minicourse naturally will want to know more about the materials used in the course, but the minicourse may not be used to promote any particular product.*

    ☒ The presenters understand and accept this policy.

12. *Policy on Recording or Broadcasting*:
    *The recording or broadcasting of any MAA sponsored event, including but not limited to proceedings at sectional and national meetings, workshops, minicourses, short-courses, and colloquia, is strictly forbidden without the explicit permission of the Mathematical Association of America.*

    ☒ The presenters understand and accept this policy.

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**This application should be submitted electronically to:**

**Martha Abell, Chair**
**MAA Committee on Minicourses**
**martha@georgiasouthern.edu**