Mathematical biography poster assignment

The content of our posters. For this assignment you are to make a poster celebrating the life and work of a contemporary mathematician; i.e., a mathematician whose primary contributions were in the 20th or 21st century. You should let your own interest and research guide your decisions on what to include, but each poster should display several of the following:

- Typical biographical data: date of birth, death, family tree and nationality, education, honors, employment positions,...
- A description of the person's upbringing.
- Some mention of what encouraged the person to become a mathematician.
- A description of any obstacles the person had to overcome to become a mathematician or to continue in their mathematical career.
- Some description of the person's contribution to mathematics.
- The impact of the person's mathematical contributions or career as a mathematician.
- A description of the person's human qualities, interests, hobbies, or life experiences outside of mathematics.
- What you learned about this person that challenged perceptions or stereotypes that you or society hold about mathematics or mathematicians.

Your poster must include a list of references either on the front or the back. These references must be diverse, they cannot simply be a few obscure Internet sites. Internet sites should be reputable and you must include several references beyond the Internet.

Normal rules regarding appropriate referencing and citation must be followed. Specifically, every passage you use that you have not written must be quoted and appropriately cited.

Your poster must be original. You cannot simply cut and paste passages from reference materials and glue them to posterboard.

The purpose of our posters. Mathematics and mathematics education are hindered by many negative stereotypes. Most people believe that mathematics is a static, archaic, and inhuman landscape. In reality, more mathematics is created now than any other time in the history of humankind. We are in the midst of a golden age in mathematics. Despite this, almost nobody can name a single living mathematician! Moreover, mathematics is a very human discipline. Your posters can dispel negative stereotypes and misperceptions by showing mathematics as a vital, living, dynamic, and humanistic discipline.

Suggestions. Choose a mathematician who interests you. It really shows in the posters when you personalize them. For example, find a mathematician whom you are related to, who shares your birthday, is from the same city as you, etc. Find a mathematician from a minority group or who escaped persecution. Say what you learned from researching the life of this mathematician. And, find out something interesting about them other than what is in the standard biography – find out their Erdös number, what their favorite food was, what they liked to drink, whether they traveled, what their family life was like, etc.

Poster presentations. All posters will be displayed in class. The author's name must be clearly displayed on the front.

Assessment criteria. Assessment, on a scale of 1–5, will be used to reflect how well each poster achieved each of the following:

- An informative presentation of biographical data.
- An engaging portrayal of the subject as a human being from whose life and work everybody can learn.
- Success in using the subject's biography to aid in our efforts to demonstrate that mathematics is a vital, living, dynamic, and humanistic discipline.
- Accessible description(s) of the subject's mathematical contributions, impact on the field of mathematics, leadership in the community of mathematicians, broader intellectual impact, and/or broader societal impact.
- A physical construction of a high quality poster, including: appropriate design, pleasing visual layout, effectiveness, appropriate mix of media and information, effort, etc.

Assessment. Using the criteria above, your poster will be assessed by peers in your class, and by Prof. Strogatz and Kelsey.

Peer Assessment. Each student is required to assess the posters of 9 other students.

For each poster that you assess you must completely fill out an assessment form, including written feedback. Peer reviews will be blind: the author of the poster will not know the identity of the reviewers. Good feedback is

- Specific: Don't say, "That's a nice poster," or "I was confused by what you wrote." Do say, "I liked how you explained X," or "I got lost when you started describing algebraic geometry."
- Balanced: List equally the things you think need changing, things you think are great, and things that are just interesting.
- Useful: Don't say, "I was feeling grumpy today." Do say "You didn't explain what is meant by a projective scheme, so I had a hard time understanding."

Peer assessment will not work unless everybody participates. Students who do not assess 9 other posters and turn the corresponding assessment reports in to Prof. Strogatz will receive a failing grade on their poster.

Assessment by Professor. Based on your poster and the peer feedback, Prof. Strogatz and Kelsey will assign a final grade for your poster.

Timetable

- **October 27.** Submit a statement of your first and second choices for who you would like to be the subject of your poster. For each of your choices, write a sentence explaining why you picked them. Prof. Strogatz will review these to ensure everyone writes about a different mathematician.
- **November 15.** Due date for posters. Peer review three posters displayed in class.
- **November 17.** Peer review three more posters displayed in class.
- **November 29.** Peer review three more posters displayed in class.

References and resources. There are many places to find information about posters and contemporary mathematicians. Several are listed below.

Biographical information in print

- Mathematical People by Donald J. Albers, Contemporary Publishing, 1986.
- More Mathematical People edited by Donald J. Albers, Gerald L. Alexanderson, and Constance Reid, Academic Press, Inc., 1990.
- Women Becoming Mathematicians: Creating a Professional Identity in Post-World War II America by Margaret Anne Marie Murray, MIT Press, 2000.
- Change is Possible: Stories of Women and Minorities in Mathematics by Patricia Clark Kenschaft, American Mathematical Society, 2005.
- Notable Women in Mathematics edited by Charlene Morrow and Teri Perl, Greenwood Press, 1998.
- Women in Mathematics by Lynn M. Osen, 1974.
- Women in Mathematics: The Addition of Difference by Claudia Henrion, Indiana University Press, 1997.

Biographical information on the internet

- `http://www-groups.dcs.st-and.ac.uk/~history/BiogIndex.html` The biography section of the MacTutor History of Mathematics Archive. This is the most extensive historical archive on the Internet. It contains, for example, biographical data for more than 100 mathematicians born in the period 1920 - 1939.
- `http://www.genealogy.ams.org/` The Mathematics Genealogy Project. Here you can find information about the mathematical genealogy of thousands of mathematicians.

- http://www.oakland.edu/enp/ The Erdös Number Project. This database helps celebrate collaborations between mathematicians.
- http://www.awm-math.org/biographies.html Biographies of female mathematicians, from the Association of Women in Mathematics.
- https://www.agnesscott.edu/lriddle/women/women.htm Biographies of female mathematicians, from Agnes Scott College.
- http://www.math.buffalo.edu/mad/ Mathematicians of the African Diaspora. Biographies of Black mathematicians.
- http://lathisms.org/ Biographies of Latinos, Latinas, and Hispanics in the mathematical sciences.
- http://www-groups.dcs.st-and.ac.uk/~history/Day_files/Year.html Mathematicians by birth and death dates.

Information on Posters For more information on posters, the following Internet sites may be useful:
http://writing.colostate.edu/guides/speaking/poster/
http://www.awm-math.org/workshops/posters.html
http://www.kumc.edu/SAH/OTEd/jradel/Poster_Presentations/PstrStart.html

Acknowledgment. This document is adapted from *Discovering the Art of Mathematics* materials by Dr. Julian Fleron.

Peer Assessment Form

Name of the poster's author:

Assessment criteria. Assess on a scale of 1–5 (with 5 being the best) and give feedback on:

1. Is the poster an informative presentation of biographical data?

2. Is the poster an engaging portrayal of the subject as a human being from whose life and work everybody can learn?

3. Does the poster succeed in using the subject's biography to aid in our efforts to demonstrate that mathematics is a vital, living, dynamic, and humanistic discipline.

4. Does the poster provide an accessible description(s) of the subject's mathematical contributions, impact on the field of mathematics, leadership in the community of mathematicians, broader intellectual impact, and/or broader societal impact.

5. The physical construction of the poster, including: appropriate design, pleasing visual layout, effectiveness, appropriate mix of media and information, effort, etc.

Further comments? –