

Featured Physicist Activity: Sultana Nahar

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Context

At Western Washington University, I teach classes in the Physics & Astronomy Department and in the Science, Mathematics, and Technology Education (SMATE) Program. Since I was hired in January 2019, I have implemented a Featured Physicist Activity. Featured physicists are living women or gender minorities, mostly women of color, with a degree in physics or a closely related field. The Featured Physicist activity has three parts: (1) during class, I spend a few minutes highlighting a physicist whose work has some connection to the topic of the day; (2) after class, I send an announcement to students summarizing the content from the day and providing additional information about the featured physicist; and (3) on homework or exams, I ask students to identify a physicist from class who they find interesting and view as a role model.

I have been featuring you in my teaching for over a year, and I would like to take this opportunity to let you know that you are impacting students at Western Washington University. In addition to informing you about how your work is incorporated into my teaching, I share student responses in the hopes that you find them uplifting or affirming. To that end, in this document, I've included four types of information:

1. A screen cap of the most recent version of the slide I use when highlighting you and your work in class,
2. An excerpt from the most recent class announcement in which I provide students with additional resources to learn more about you and your work,
3. A copy of the most recent exam prompt that asks students to identify a featured physicist who they find interesting, and
4. Copies of responses from students who chose to write about you.

Featured Physicist slide

Sultana Nahar

Atomic physicist at The Ohio State Univ.

Studies atomic processes in plasmas, *i.e.*, ionized gases that are electrically conductive.

Founded the International Society of Muslim Women in Science: 301 members in 33 countries.

A portrait of Sultana Nahar, a woman with dark hair, wearing a white button-down shirt. She is looking slightly to the right of the camera. The background is dark with a colorful, abstract light pattern, possibly a plasma or a star field.

Class announcement

The featured physicist was [Sultana Nahar](#), an atomic physicist. Dr. Nahar studies plasmas, which are clouds of ionized atoms that are electrically conductive. Lightning is an example of a plasma that many of us may be familiar with. In addition, Dr. Nahar founded the International Society for Muslim Women in Science ([ISMWS](#)) and, together with Lotfia El Nadi, she co-founded the International Society for Arab Women in Science ([ISAWS](#)). To learn more about Dr. Nahar's efforts to improve physics education internationally, check out this article called, "[Sultana Nahar: Educating the Masses.](#)"

Exam prompt



Nine physicists were featured in class during the previous three weeks. For a list of featured physicists with links to announcements in which I provided information about them, check out the following page on Canvas: [internal link]

Choose one of the featured physicists to learn about in a little more depth. Watch a video or read an article about the physicist of your choice. Then, respond to the following prompts:

- What do you find interesting about the physicist you chose to highlight?
- What makes them a possible role model for you?

Your response to each prompt should be a few sentences long. Feel free to write more if you feel like it!

Most recent responses to exam prompt

Response 1

I decided to choose to dive a little bit deeper into the life of Sultana Nurun Nahar since she had a PhD in atomic theory and I've always been fascinated with everything containing the word "atomic" in its name. She has contributed a lot to the science world, but, in my opinion, her most notable contribution is the resonant nano-plasma thermostatic method for cancer treatment. I hope to help fight problems that face everyday people in my future life and continue to push the boundaries of human engineering and science.

However, it turns out that Sultana, just like my previous chosen physicist Elena Long, has not only advocated for others in the scientific world but also won awards for "efforts to promote physics research and teaching through collaboration, mentoring, and philanthropy in several third-world countries..." I've had the privilege to grow up all over the world from Europe to Africa to Asia and along the way I've not only seen the struggles of third world countries firsthand, but have tried my best to help them. Every time I visit South Africa (my entire extended family lives there) I've gathered countless school supplies for all grades K-12 (including some physics items!!!) and driven out into the Bundus and donated them to struggling schools.

I've always dreamed of being a greater impact and wanted to always grow up to have the power to be a bigger role model for those around me and be able to contribute more to places like these.

Response 2

I choose to feature physicist Sultana Nahar for her efforts to provide a high level of education in her outreach programs in the 1990's. In an article they stated in the mid-1990s, Nahar started an outreach program to help improve the quality of education and research in undeserved areas and to encourage international involvement of scientists in developing countries, such as her home country of Bangladesh. The outreach programs evolved when she began doing physics workshops with programs installed at OSC through emails for researchers in Bangladesh, Egypt, India, Iran, Iraq, and Turkey.

I find what makes them a good model for providing back in areas in dire need of the education she is able to provide. I myself want to teach and provide pathways to a higher career path to many in respect of all those who provided me with the footwork necessary to accomplish my endeavors.

Response 3

I found Sultana Nahar to be interesting because I find the field of atomic physics to be interesting since it relates to fields that I find to be interesting, such as Nuclear chemistry, but it specifically focuses on a single nucleus of an atom in isolation, which I haven't learned to much about since most of the such as in chemistry we study atoms not just by themselves but how they interact with others and form certain structures.

Another thing I respect about her is how she advocates/promotes education in 3rd world countries and how she can be a role model for Muslim STEM majors. It's important for people who identify highly with their own culture to have role models or people who advocate for them, and the fact that Sultana Nahar does this is very admirable.