We are here today to celebrate and recognize the achievements of some remarkable women at Missouri S&T. The Woman of the Year award is given to a female faculty member dedicated to student education and committed to diversity. Looking out at the audience today, I see a diverse group of women who have exemplified the abilities and qualities that improve the campus climate for women and for everyone. There are scientists of all kinds, historians, a psychologist, literary scholars, and even a couple of engineers.

In preparing for today, I started thinking about what it means to be a female role model on this campus, and I remembered a meeting of female faculty members with a senior (male) administrator not that long ago. During the discussion, he mentioned the growing number of female faculty members with a senior (male) administrator not that long ago. During the discussion, he mentioned the growing number of female faculty members on campus, but he also said that many of them were not the “right” kind of mentors because they were not women in STEM fields.

I would politely—and maybe a little forcefully—disagree. While I understand the importance of having someone who “looks like you” as a role model within your chosen field, his attitude devalues the contributions of accomplished, professional women in other areas—and we certainly have accomplished, professional women in positions across campus. Saying someone is not the “right” role model creates a hierarchy and a sense of competition that does little to provide the educational environment we want for our students. In a time when smart, educated women are still judged for the clothes they wear, the way they do their hair, or what they say (if they are not interrupted while trying to say it) it seems to me that we should be encouraging and supporting ALL women in their careers. Yes, we need more women in STEM fields, but we also have to remember that STEM cannot and should not stand alone. Let me give you some examples why.

In one of my survey courses, we talk about the post-World War II explosion of students going to universities. In some European countries, the student to faculty ratio in institutions of higher learning was 200:1. We compare that to S&T, where the ratio is 17:1. In one class discussion, I said that you get to know your professors here at S&T, and they get to know you. A first-year student in the front row, a civil engineering major and member of the band, told me that I was the only professor who knew her name and talked to her. I also knew the name she preferred to be called, which was not the same as the name on the class roster. Many of our introductory courses are large and the humanities may be the only place where, due to the nature of the courses, students get one-on-one attention early in their college coursework. By my calculation, 45% of instructors in the humanities and social sciences at Missouri
S&T are women; we may be their first professional role models.

The mindset that there is a difference between STEM and Humanities also artificially separates disciplines. The sciences and the arts have always been connected. Let’s look at a few examples from history. Perhaps the most obvious Renaissance man is Leonardo DaVinci.

Leonardo is remembered for his artwork, like the *Mona Lisa* and *The Last Supper*, but he is also known for his engineering. And some of his drawings raise the question: Is it science or art?
During the Enlightenment in the 18th century, the philosophes published an *Encyclopedia* with the intention of making knowledge accessible and more secular. Subtitled the *Reasoned Dictionary of Sciences, Arts, and Crafts*, the Encyclopedia was made up seventeen volumes of text and eleven volumes of drawings.

Topics range from politics to natural rights to technology and art. The drawings again combine art and science as did the philosophes themselves. We cannot separate one from the other without losing a bit of both.

While these scientific drawings are certainly artistic, artists haven’t ignored the sciences. Georges Seurat is perhaps best known for starting the neo-impressionist movement and painting *A Sunday Afternoon on the Island of La Grande Jatte*. The painting uses the sciences of vision and color to try to make the painting more luminous. He used pointillism and placed colors next to each other so that, in theory, the eye would use optical mixture to create the most realistic color. Seurat is quoted as saying, “Some say they see poetry in my paintings; I see only science.”

Thanks to historians, journalists, filmmakers, and art historians, we know about the scientists and artists from the past and can apply their discoveries in the present. But the past is not the only place to see the interaction between STEM and the arts and humanities. Some wonderful examples can be found right here on our campus. While we all borrow from other fields, I want to focus on some of our female students who have effectively combined science, engineering, and the humanities in their education. They understand the ways in which the fields are interrelated, and they are the role models for future generations of professional women.

Rebekah Harrah is a senior English Education major from Rolla. She is student-teaching in St. James this semester, and today she is presenting her research on “Reading Comprehension and Chemistry” at the Undergraduate Research Conference in the Havener Center. Bekah’s research is based on the idea that reading is an important component of every subject, including the sciences. She studied exam questions for Chemistry I using the “Depth of Knowledge” levels used by Missouri K-12 schools.
and standardized tests. With the information she gathered, instructors can assess student progression and can potentially help determine whether Missouri college readiness standards are transferable to course content during a student’s first year in college. When I asked Bekah about her experience, she told me that “being at a STEM-oriented school has provided me with a unique experience.” Understanding Chemistry was essential to her research—even as an English major, but she also discovered that “students in STEM fields need skills that only the humanities can provide to be successful in the workplace.”

Kailea Tilden is a senior in biological sciences from a small town near Branson. She’s always been interested in science, and she’s been dancing since she was 3 years old. When she arrived at Missouri S&T she didn’t know what she wanted to do with her biology degree, but she knew she wanted to keep dancing. She joined the Ballet and Dance Club her freshman year and started teaching dance her sophomore year as a “fun way to use [her] talents to help pay for [her] college expenses.” She now teaches her own dance program and has almost thirty students. I asked her about how dance helps her with her science classes and how science has helped her with the arts and she says,

For me, learning anatomy, physiology, and physics have given me incredible insight into the mechanics of dance. Having in-depth knowledge of how the body works has helped me in my teaching, choreographing, and dancing. Because of dance, I’ve developed self-discipline, organization, better and faster memorization, and time management skills that help me succeed in academics. I’ve also developed a keen eye for presentation—design, balance, focus, color, etc.—that has helped me in creating many presentations over the years. Most of all, growing up as a dancer has given me the ability to think outside the box, which is especially useful in science. Sometimes answers to scientific questions are not clear-cut and require abstract thinking. Honing my creative abilities has helped me with this abstract thinking.

When Kailea came to S&T she didn’t know what she would do with her degree, but now she knows she will use it “to bridge the gap between my dance background and my interest in science—by doing physical therapy for dancers.”

Bekah and Kailea aren’t isolated examples. Kelly Dunlap started taking French classes when she wanted to be a Nuclear Engineer since France is the world leader in nuclear energy production. She has continued with a French minor now that she is a Biochemical Engineering major. She is working on an OURE project translating articles from the Encyclopédie into English on topics such as bees, migraines, pores of the skin, and the Iron Age for an online, open-access project. For Kelly, humanities help her with her communication with others, an aspect of professional life that she finds is not stressed in her engineering classes.

Rebecca Holmes is a recent graduate from the History Department who now works as a Staff
Analyst for Boeing. As she told me, “Not everything in life can be engineered. It takes a balance of people who are technical and people who can bridge the gap between the technical engineers and the rest of society to make the products more successful.” Every person I approached and asked for examples of students who combine STEM and humanities could immediately list a handful of students.

So while we are gathered here today to celebrate the achievements of one outstanding female faculty member, let us celebrate the contributions of all the women on campus who make a difference to student education, diversity, and the campus climate. Let us also learn from our students who want to “bridge the gap,” a gap that I would argue we enlarge when we focus on STEM and leave out other disciplines. There are still walls that we non-STEM people bump up against, such as when colleagues don’t realize we conduct research or don’t know that one can earn a degree in non-STEM disciplines at S&T. Our students recognize the importance of a well-rounded education where liberal arts majors understand the role of science and where scientists and engineers benefit from a broad education that includes the humanities, social sciences, and the arts. While I don’t think that an administrator here today would tell a group of women professors that they aren’t the “right” kind of role models, I do think that we can better value the contributions of all women on our campus. Today is one day to do just that.