

# JSHS MENTOR PROFILES

Student success often depends on the guidance and mentorship they receive.

Students participating in the Junior Science & Humanities Symposium (JSHS) benefit from the involvement of more than 100 dedicated men and women whose support ranges from insightful questions to moral support to hands-on assistance.

Their stories show why JSHS programs – and participating students – are a success.



ENVISION THE FUTURE



# High School Teacher from Bayfield, WI



## BACKGROUND

I teach alternative education to at-risk students, and I also teach chemistry and physics to college-bound students. I try to incorporate science projects and research into both of those programs.

I teach high school students in Bayfield, Wisconsin, which is a very small, rural school district in northern Wisconsin. We are located on the south shore of Lake Superior, adjacent to the Apostle Islands National Lakeshore. Our high school enrollment is about 120 students. Approximately 80% of our students are Anishinaabe (Native American), and approximately 70% of our students qualify for free/reduced lunch.

## WHY JSHS

As we work on a project, students begin asking questions regarding the project. These questions lead to class research and sometimes they lead to individual research, which in turn often leads to JSHS research projects.

I facilitate student research projects with my high school students. [I try to encourage students to use our natural surroundings for their research](#) to take advantage of what our region offers. Most of the projects focus on environmental studies, aquatic studies, agriculture, and physical behaviors of Lake Superior.

I became aware of JSHS in the 1990s, and I have been participating with students since that time. I continue to be involved with JSHS because it is an amazing program for students. It allows them to [go above and beyond what our small school can offer in its typical curriculum](#).

## THOUGHTS ON MENTORSHIP

[JSHS offers students an opportunity to participate in intense and real science research](#). My students can learn scientific methods through practice, connect with area researchers, contribute to meaningful research, and communicate research findings. They can also potentially earn college scholarships. I love all of those things, and I love watching my students engage in science research and grow as learners.

*Note to editors: In the interests of privacy, the US AEOP is not publishing full names of participants in the JSHS. We will facilitate interviews as requested.*



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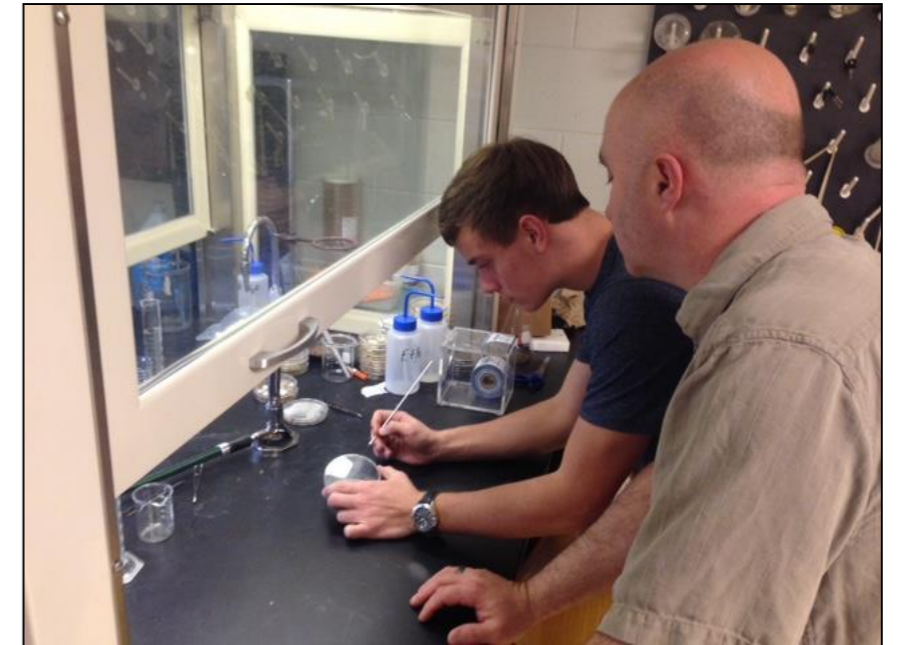
# High School Teacher from Camdenton, MO

## BACKGROUND

I have a Master's of Natural Science in Biology and experience conducting research for the Missouri Department of Natural Resources. I've mentored research students since 1998. I currently teach Science Research, Marine Biology / IB Marine Science, Honor's Physics, IB/AP Environmental Science, IB Biology, and Astronomy/Meteorology.

## WHY JSHS

All research students submit their research to the JSHS regional symposium (located at Maryville University in St. Louis, MO). I am involved in ALL aspects of the students' research (from developing their research questions through the process of paper writing and presentation).



Student participation in JSHS is required because it's what scientists do. [Research without sharing \(through publishing and/or presentations at symposia\) helps no one but the individual researcher.](#) JSHS gives young scientists a way to replicate that professional process.

## THOUGHTS ON MENTORSHIP

Research has always been a love of mine. [What better impact could one make on the world](#) then to turn young men and women into future scientists? Their future contributions (through our efforts) will make more of an impact than any one individual.

Student relationships. It's all about making connections with kids and turning them onto research. Kids are often times used to being GIVEN a project for a class. This is, for most, the first time THEY get to choose their project. Treating kids as if they were actual scientists (and not high school students) [empowers them to develop the dedication to do amazing things.](#)

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# Regional Director from Puerto Rico

## BACKGROUND

I am a scientist with an M.S. in Biology and a Ph.D. in Environmental Science. I conduct research in several areas including terrestrial invertebrates and astrobiology. My location is Puerto Rico. I manage a field research center to preserve an endangered species of tree, and I teach science at various levels from High School to Graduate College (ages 15 – 37).

## WHY JSHS

I started very early to do [my own “basic research” at elementary school](#). I started with the Science Fair, and in 1982 I was the first delegate to the National JSHS representing Puerto Rico! From that time on, I became a mentor to other students participating in the Regional JSHS and assisting the former director as a volunteer and chaperone. After getting my Ph.D., I got involved as a judge in the Regional JSHS and as a mentor to students and science teachers. I have been a Regional Director since 2008.



## THOUGHTS ON MENTORSHIP

[As a JSHS alumni myself, I can attest to the long term benefits of this experience](#) as a formative event. I love being able to provide the same experience to other students. I have a strong interdisciplinary research background, and I advise students from very diverse fields and interests. My role is to make sure they follow the appropriate research approach, match them to mentors, and direct them to outreach activities which [keep them motivated to follow STEM careers](#).

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# High School Teacher from Cashton, WI

## BACKGROUND

I have been a science teacher for 12 years. I teach grades 10-12 in Western Wisconsin at Cashton High School; we have about 150 students. This is a very small, rural farming community. There is much diversity among the farming world, though, from Amish and organic to large 300+ cow dairies. I always try to incorporate new technologies into my classroom as much as our budget will allow.

I'm just a teacher who encourages kids to do projects. I try to find them contacts, which is a tough job in our small community. [My main goal is to get kids in real-life situations where science is applied.](#) Science is perfect in a school lab - not so much in a STEM project!

## WHY JSHS

I like seeing the kids apply science first hand, without a lab manual to guide them. Mostly, I love exposing them to a world of science they have never seen at the competition. [It opens their eyes to the bigger world around them and helps them see that science can be taken to another level.](#)

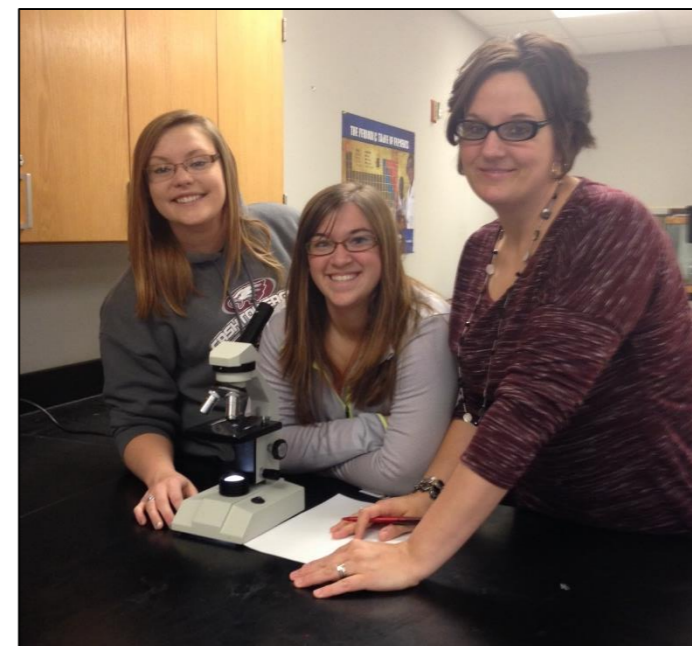
In addition, often when we travel to Regionals or Nationals, it is the first time our students have ever stayed away from home, or the first time they have ever flown. Showing them the country on the Nationals trip is the fun part! The kids love the activities and love getting meet new people from other schools.

## THOUGHTS ON MENTORSHIP

Our JSHS experience is a lot different than most. We live in a low-income district composed mainly of farmers with a technical school work force. The closest university is 45 minutes away from our school and many of our students don't even have vehicles to take them there on their own. We do our best to apply research to what we know in our area - farming.

We do not have a class or special equipment; we rely on anything we can get from the grocery store for our supplies list. Students have to work on this in the summer while juggling sports, chores on the farm, band lessons, etc. [My role is to help them step up their level of research](#) so that we can compete with the huge schools.

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# High School Teacher from Bangor, ME



## BACKGROUND

I have a B.S. in chemistry and microbiology and an M.S. in plant pathology. I am the Science Department Head and STEM Academy Director at Bangor High School. More importantly I have been involved with developing student researchers for the past 30 years. I developed a Transformative Research Apprenticeship program at Bangor High School in conjunction with the University of Maine College of Engineering.

I am particularly interested in water research and developing methods for producing clean water for people in developing countries. I work with many schools in Maine (and soon will expand to the entire country) on developing storm-water solution strategies for their communities.

## WHY JSHS

I love this program and the people who run it; [our kids love participating and greatly appreciate all that the armed services do to make this an incredible experience for them!](#)

We focus on [getting kids involved in transformative level research](#). My goal is to mentor them through the process. I have been very fortunate to have a school system that gives great support in our efforts to develop a STEM program with a direct focus on research. Our school model is to have them work for a three-year period on their research projects. The students love meeting new people, going to different places, learning new things, and getting new research ideas. I love the competition aspect of the program as well; trying to be the best is always a great goal for kids.

## THOUGHTS ON MENTORSHIP

A key thing is exposure for kids. Even if they are not directly competing they can see what research looks like and how they can get involved. [Nothing takes the place of actually seeing the brightest minds doing great things](#). I stress goal setting for kids. Kids can do way more than we give them credit for or they think they can do.

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