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# About the Kentucky Academy of Science

- Kentucky's own scientific society, Founded in 1915
- 4200+ members across Kentucky (Professional scientists, graduate students, undergraduates, and K-12 teachers)
- Crosses STEM disciplines - Life Sciences, Social Sciences, Physical Sciences
- Strong relationships with 20 Affiliated Institutions



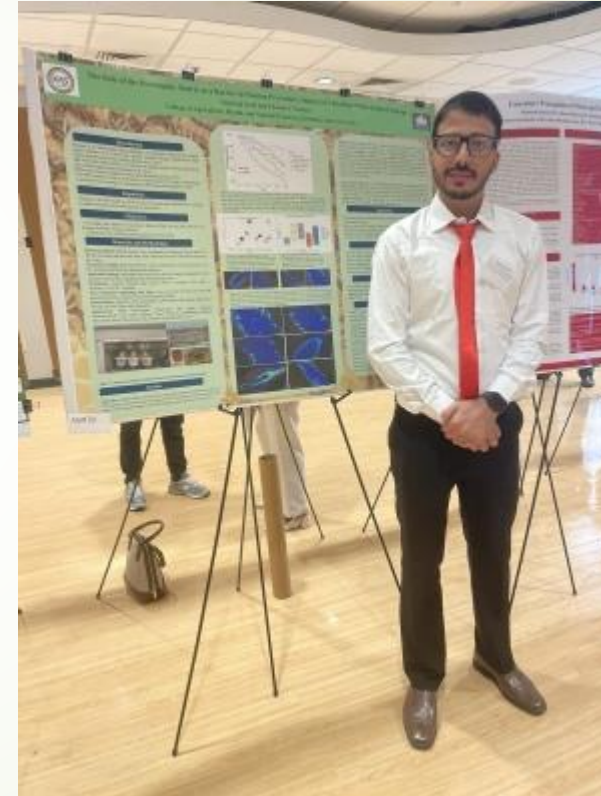
# Affiliates





# What we do

- Host an annual statewide meeting for 700 scientists
- Kentucky STEM pathways & workforce development
- Mentor matching among scientists, teachers & K-12 students



# What we do

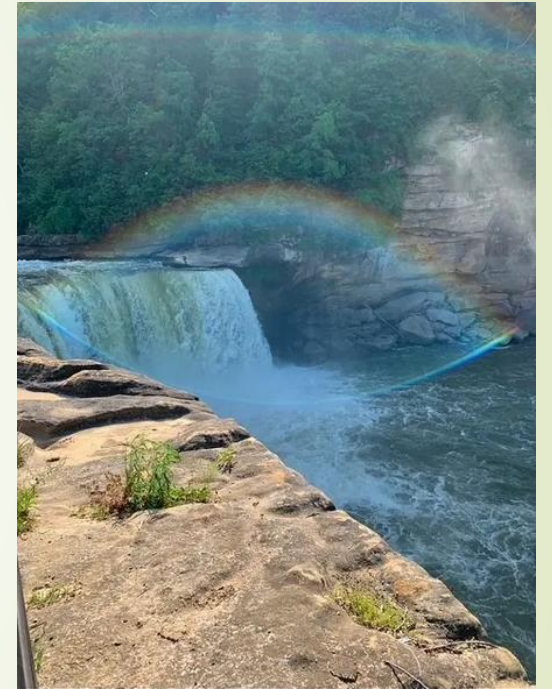


- Small research grants for members
- Free public outreach via Kentucky Science Speakers Bureau (365 members!)



# Support for Kentucky Science Teachers

- Resources for Teachers on our website
- Free membership, meeting registration & PD workshops for K-12 Teachers
- Speakers Bureau members visit or answer Kentucky teachers' questions
- We are guided by KDE and Kentucky Science Teachers Association (KSTA) about how we can support and retain Kentucky teachers
- We would like to build capacity to do more





# Posters at the Capitol



Thank you for  
ensuring our  
Universities are  
well funded so  
we cultivate  
the next  
generation of  
Kentucky  
scientists

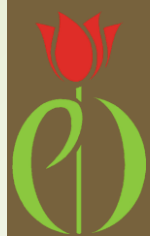


# Examples of Topics of Expertise in Kentucky

- Agriculture
- PFAS (Forever Chemicals)
- Health & Medicine
- Artificial Intelligence
- Nuclear Energy
- Medical Cannabis
- Science Education
- Geological topics





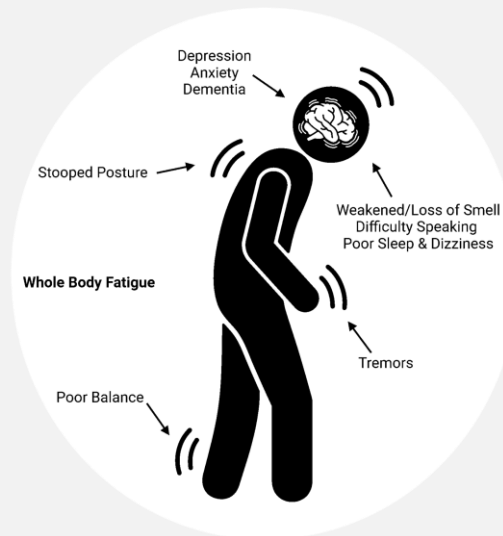


# SB 27: Parkinson's Disease Registry

14 U.S. states have established Parkinson's Disease Research Registries: CA, CT, MD, MA, MO, NE, NV, NY, OH, SC, UT, VA, WA, and WV

Parkinson's disease is the fastest-growing neurodegenerative disease worldwide—with an estimated 1.2 million in the U.S. by 2030<sup>1</sup>

Studies have estimated how frequent Parkinson's disease is and identified both genetic and environmental risk factors, including recently banned Paraquat, known to lead to PD development<sup>2</sup>



Registries often include genetic information, which is necessary for studies exploring the genetic basis of Parkinson's disease. Registries that disclose genetic information can help advance the future for personalized medicine approaches.

A registry will help address questions regarding risk factors, treatment, healthcare use, and outcomes for diverse populations. Also, they can help with patient screening, data sharing, increasing study participation, increasing data security, reflecting more accurate diagnosis numbers, and increasing access to information<sup>3</sup>

1: Parkinson's Foundation. (n.d.). Statistics. Parkinson's Foundation. Retrieved February 24, 2025, from <https://www.parkinson.org/understanding-parkinsons/statistics>  
2: Wu AD, Wilson AM. Parkinson's disease population-wide registries in the United States: Current and future opportunities. *Front Digit Health*. 2023 Mar 22;5:1149154. doi: 10.3389/fgth.2023.1149154. PMID: 37035478; PMCID: PMC10073707.  
3: The Michael J. Fox Foundation for Parkinson's Research. (2023, April 13). Breaking news: Parkinson's disease biomarker found. The Michael J. Fox Foundation for Parkinson's Research. <https://www.michaeljfox.org/news/breaking-news-parkinsons-disease-biomarker-found>



# PFAS in Kentucky

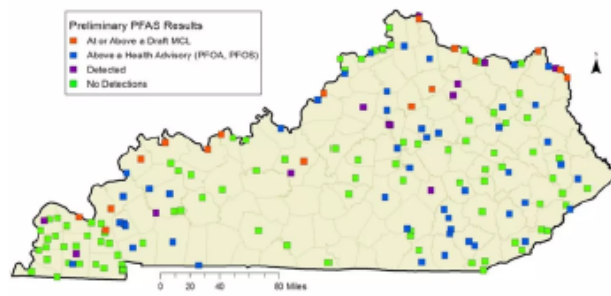
## Overview

PFAS are a class of long-lasting chemicals used in many everyday products (food wrappers, firefighter gear, furniture, etc). Scientists are now learning that these chemicals have many negative effects on human health and the environment. We encourage actions that will track PFAS contamination and take steps to mitigate PFAS negative effects.

## Things to Know

<b>What are PFAS?</b>	<ul style="list-style-type: none"><li>• PFAS stands for per- and poly- fluoroalkyl substances</li><li>• There are nearly 15,000 different PFAS</li><li>• PFAS are highly stable compounds that are resistant to dirt, oil, and water</li><li>• PFAS are also known as 'forever chemicals'</li></ul>
<b>Environmental Impacts</b>	<ul style="list-style-type: none"><li>• PFAS have been detected in every sample taken from a Kentucky lake or stream as of July 2023</li><li>• PFAS have been detected in over 60 of Kentucky's drinking water systems</li><li>• PFAS have been found in the blood of 97% of Americans</li></ul>
<b>Health Impacts</b>	<ul style="list-style-type: none"><li>• They are associated with many health issues, including autoimmune conditions and cancers</li><li>• PFAS can have significant negative impacts on developing fetuses</li></ul>
<b>What can we do?</b>	<ul style="list-style-type: none"><li>• The EPA recently released updated guidance for PFAS exposure (<a href="#">EPA guidelines</a>); EEC continues to monitor PFAS levels in public water systems</li><li>• Install home water filtration systems (i.e., reverse osmosis, granular activated carbon filters) to successfully remove PFAS</li><li>• Raise and maintain public awareness about PFAS exposure and prevention</li></ul>

Public Community Water Treatment Plants Sampled for PFAS



Kentucky Energy & Environment Cabinet



# HB 421: Support Cancer Screenings



HB 421 would  
cover colorectal  
cancer screenings  
and tests  
recommended by  
the US Multi-  
Society Task Force  
on Colorectal  
Cancer

## Incidence

Kentucky has the 3rd highest rate of colorectal cancer in the nation.

Rates of colorectal cancer, especially in young people, continue to rise.

## Survival

Colorectal cancer has a 91% survival rate when diagnosed early, and a 13% survival rate when diagnosed at a late stage.

## Screening

Less than 50% of eligible adults in Kentucky receive colorectal cancer screening.

## Success

Through colonoscopies, doctors are able to identify, diagnose, and remove early-stage or precancerous polyps

### Sources:

Kentucky Colon Cancer Screening & Prevention Program Report 2023

<https://gco.iarc.fr/en>

<https://www.cancer.org/cancer/types/colon-rectal-cancer/detection-diagnosis-staging/survival-rates.html>





# Useful Resources from other States

## Missouri Science & Technology Policy Initiative (MOST)

<https://mostpolicyinitiative.org/>

Science Notes topics include:

- Land Application and PFAS
- Medicaid benefits
- Hydropower
- Cultivated meat
- Building Energy Codes



# Useful Resources from other States

## West Virginia Bridge Initiative

<https://scitechpolicy.wvu.edu/home>

“Translating the work of WVU researchers to policymakers to fulfill WVU’s mission as West Virginia’s R1 Land Grant University.”

- Satellite Broadband
- Flood Resilience
- Artificial Intelligence
- Etc.



# A National Network of Science Advising: Science & Technology Policy Fellowships

- Established in Missouri, West Virginia, Indiana, Pennsylvania, North Carolina, Virginia, New Jersey, Arizona, California, Connecticut, Idaho, Colorado
- Fellowships in Planning stage: Michigan, Massachusetts, Rhode Island, Washington, Wisconsin





# See you at NCSL!

- Legislators and Staff will have opportunities to learn more about Science & Technology Policy Fellowships in Boston in August





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# References

- State R&D Dashboard- shows how many researchers are supported by federal dollars and what funding is coming into Kentucky:  
<https://www.aaas.org/news/state-rd-dashboard>
- CLIMBS project, 8 institutions collaboratively addressing climate resilience:  
<https://kynsfepscor.uky.edu/climbs/>
- Kentucky Science & Technology Plan [https://kynsfepscor.uky.edu/wp-content/uploads/2023/08/KY-ST-Plan\\_FINAL\\_08-04-2023.pdf](https://kynsfepscor.uky.edu/wp-content/uploads/2023/08/KY-ST-Plan_FINAL_08-04-2023.pdf)
  - STEM education
  - Research Competitiveness
  - Innovation & Entrepreneurship
  - High-Tech industry Growth