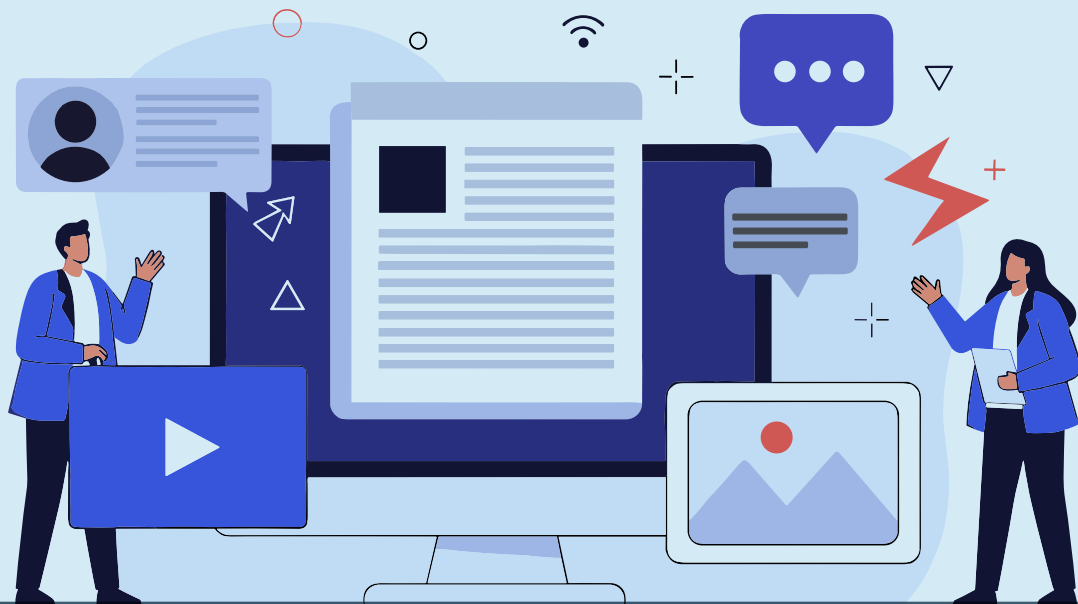


2025 Allegheny County Local Government Case Competition: Using Large Language Models to Strengthen Local Government and Human Services



APRIL 2026



The Allegheny County
Department of Human Services
One Smithfield Street
Pittsburgh, Pennsylvania 15222

analytics.alleghenycounty.us

CONTENTS

Introduction 3

The Case Competition 3

The 2024 Case 4

Judging 4

Case Competition Winners 6

1ST PLACE: ChildConnectAI 6

2ND PLACE: BridgeLink 7

3RD PLACE: Behavioral Health Intelligence System (B-HIS) 8

Conclusion 8

APPENDIX A: Other Teams and Solutions 9

APPENDIX B: Organizers and Volunteers 11

INTRODUCTION

Each year, the Allegheny County Department of Human Services (ACDHS) hosts the Local Government Case Competition, an event that brings together graduate students from across the region to tackle real-world challenges in public service. Supported by the Human Services Integration Fund,¹ the competition encourages interdisciplinary teams to design innovative solutions and present them to a panel of expert judges.

The 2025 competition marked the 18th year of this tradition and focused on one of the most transformative trends in government and human services: the use of Large Language Models² (LLMs). Students were challenged to propose practical, responsible applications of LLMs that could address critical problems facing Allegheny County—such as improving or expanding existing programs, increasing workforce productivity, strengthening oversight, or directly improving the lives of residents.

This year's theme reflected ACDHS's commitment to innovation and ethical technology use. By inviting participants to explore how AI can enhance efficiency while safeguarding equity, privacy and human oversight, the competition generated ideas with the potential to shape the future of human services.

A total of 45 students from seven universities and 12 academic programs participated. Judges representing foundations, universities, nonprofits and government agencies volunteered their time to evaluate proposals and provide feedback.

THE CASE COMPETITION

Launched in 2007 as part of ACDHS's 10th anniversary as an integrated department, the Local Government Case Competition has become a signature annual event. It offers graduate students a chance to connect classroom learning with real social issues and encourages them to consider careers in the public and nonprofit sectors. Many past participants have gone on to hold internships, fellowships and full-time positions within ACDHS, the City of Pittsburgh and local community organizations.

The competition began on Monday evening with a Kick-Off Event hosted by Director of Analytics, Technology and Planning (ATP) Alex Jutca, followed by a panel discussion with local academics and business leaders with AI expertise and a presentation by the County's acting chief public defender. These presentations were designed to give students a better idea of the kinds of challenges facing County government.

Students were assigned to teams and given a background document outlining key information relevant to the case. All teams had the option to participate in virtual feedback sessions throughout the week. On Saturday, teams presented to one of three panels of judges. Each panel selected a finalist, who then presented again to a combined judging panel. Finalists were evaluated on solution clarity, feasibility, evaluation planning and presentation quality. Cash prizes were awarded to the top three teams.

¹ HSIF is a pooled fund of grants from local foundations, created to support ACDHS's innovation and quality improvement efforts.

² Large language models (LLMs) are advanced computer programs designed to understand and generate human language. They are a type of artificial intelligence (AI), specifically built using a technique called machine learning,

where the system learns patterns from vast amounts of text data instead of being explicitly programmed with rules. LLMs can generate entire paragraphs, answer questions, write code, translate languages, and more.

THE 2025 CASE

The 2025 Allegheny County Local Government Case Competition invited graduate students to tackle a timely question many governments are grappling with: how can Large Language Models (LLMs) be used to strengthen local government and human services? Teams were asked to propose concrete applications of LLMs that address real challenges faced by Allegheny County, such as improving or expanding existing programs, increasing workforce productivity, strengthening oversight, or directly improving the lives of residents.

Participants considered the programs operated by ACDHS and Allegheny County government, the clients served by these programs, the employees who oversee them, and the contracted providers who deliver services. Each proposal needed to clearly define the problem, explain how an LLM would be trained and deployed, describe its intended use and users, and outline potential limitations and safeguards.

This theme reflected ACDHS's commitment to innovation and ethical technology use, encouraging students to explore solutions that balance efficiency with equity, privacy and human oversight. By focusing on practical, responsible applications of AI, the competition aimed to generate ideas that could transform service delivery and improve outcomes for the county's most vulnerable populations.

JUDGING










Judges evaluated proposals using five criteria:

- Well-defined problem
- Well-defined solution
- Comprehensive evaluation plan
- Quality of presentation
- Depth of knowledge demonstrated by presenters

Scores ranged from 1 to 10, with 10 representing "Outstanding" and 1-3 indicating "Weak/Poor." This rubric ensured that proposals were assessed on both technical merit and clarity of communication.

We are grateful to this year's judges for lending their expertise and time to support this event. **Judges for 2025 were:**

- **Adam Paulisick**, CEO, SkillyAI
- **Alex Jutca**, Director of Analytics, Technology and Planning, ACDHS
- **Beth Schwanke**, Executive Director of the Institute for Cyber Law, Policy and Security, University of Pittsburgh
- **Katy Collins**, Chief Analytics Officer, ACDHS
- **Michelle McMurray**, Vice President of Program and Community Engagement, The Pittsburgh Foundation
- **Pim Welle**, Chief Data Scientist, ACDHS
- **Rob Cunningham**, Vice Chancellor for Research Infrastructure, University of Pittsburgh
- **Rohit Acharya**, Founding Partner, Common Good Labs
- **Steve Wray**, Executive Director of the Block Center for Technology and Society, Carnegie Mellon University

 <p>Rohit Acharya Founding Partner <i>Common Good Labs</i></p>	 <p>Michelle McMurray, Vice President of Program and Community Engagement <i>The Pittsburgh Foundation</i></p>	 <p>Rob Cunningham Vice Chancellor for Research Infrastructure <i>University of Pittsburgh</i></p>
 <p>Beth Schwanke Executive Director <i>University of Pittsburgh's Institute for Cyber Law, Policy, and Security</i></p>	 <p>Alex Jutca Director of Analytics, Technology and Planning <i>Allegheny County DHS</i></p>	 <p>Pim Welle Chief Data Scientist <i>Allegheny County DHS</i></p>
 <p>Adam Paulisick CEO <i>SkillyAI</i></p>	 <p>Steve Wray Executive Director <i>CMU's Block Center for Technology and Society</i></p>	 <p>Kathryn Collins Chief Analytics Officer <i>Allegheny County DHS</i></p>


After the final presentations, the top three teams were selected and awarded cash prizes:

- **1st Place:** \$3,500
- **2nd Place:** \$2,500
- **3rd Place:** \$1,700

CASE COMPETITION WINNERS

1st Place: ChildConnectAI

Impact on Children and Adolescents

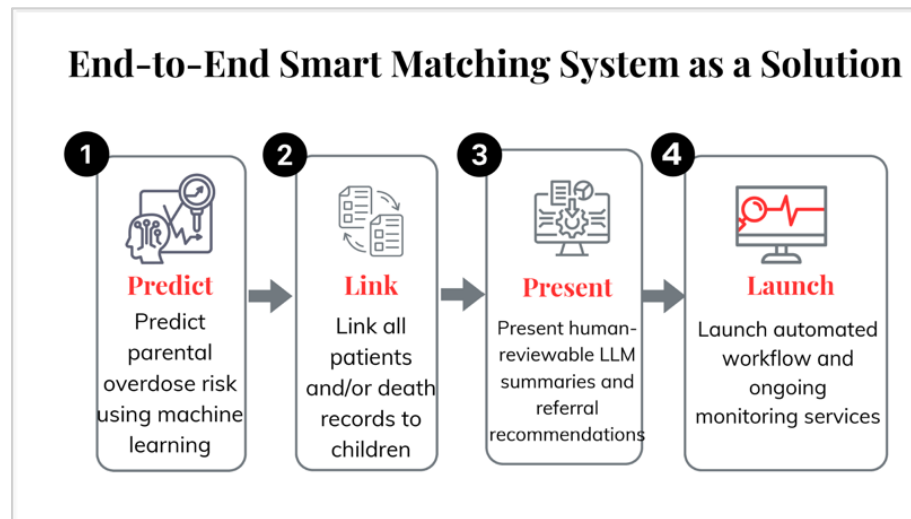


Increased risk of living with mental health issues

Risk of maltreatment and neglect

Housing instability

Source: Children and Young Adults in Allegheny County Who Lost a Parent to an Overdose, 2016–2023 | August 2025



- **Cash Prize:** \$3,500
- **Team Members:** Henry Xu and Joel Mcleod Atikemah (Carnegie Mellon University), Sreya Abraham and Sydney Mahmood (University of Pittsburgh)
- **Solution:** Team Panther Hollow imagined a solution—ChildConnectAI—that would rapidly connect children who had lost a parent to overdose to critical services. By creating verified profiles from existing ACDHS records and monitoring engagement over time, ChildConnectAI ensures timely outreach and sustained support, improving mental health and educational stability for vulnerable children and preventing more severe and costly crises down the line. ChildConnectAI would be a secure, human-guided tool that uses what ACDHS already knows to find the right children sooner, connect them to the right services faster, and keep them supported longer—safely, fairly and with full human oversight.

2nd Place: BridgeLink



System Strain Points

1 Information Silos
Critical data scattered across systems, making comprehensive case management difficult and time-consuming.

2 Client Fall-Through
Gaps in coordination lead to missed services and delayed interventions for vulnerable populations.

3 Professional Burnout
Administrative burden contributes to high turnover and decreased job satisfaction among dedicated staff.



A Day in the Life: How BridgeLink Works

After a difficult home visit, the caseworker dictates key observations. BridgeLink AI instantly drafts a structured, compliant case note, cutting documentation time by **30-50%**.

A professional, standardized letter is generated instantly, reducing referral delays.

Example:

"Met with Smith family, facing eviction. Mother lost job. Expressed high anxiety."

BridgeLink automatically completes the case notes and tag needs:
"The caseworker met with Smith family, who are currently facing eviction. The mother reported that she recently lost her job and expressed experiencing high levels of anxiety."

Housing_Insecurity, Unemployment, Mental_Health

9 AM
Morning Documentation

1 PM
Policy Inquiry

3 PM
Referral Generation

- **Cash Prize:** \$2,500
- **Team Members:** Egshighlen Batjargal and Sofia Hutton (Carnegie Mellon University), Shubhangi Dwivedi and Sitao Chen (University of Pittsburgh)
- **Solution:** Team McKees Rocks proposed BridgeLink, an AI-powered platform aimed to reduce the time caseworkers spend on administrative tasks. BridgeLink would act as an administrative co-pilot for human service professionals, helping them navigate policy, constantly changing eligibility rules, information silos and burdensome paperwork, and would integrate three core functionalities: Smart Policy Search for instant accurate eligibility and resource information; Smart Documentation to automatically transform caseworker notes into structured, compliant records; and Intelligent Summary Analysis for County-level resource allocation insights. BridgeLink would allow staff to focus less on administrative tasks and more on providing holistic, human-centered, high-quality care, leading to less burnout, lower turnover and improved quality of client care.

3rd Place: Behavioral Health Intelligence System (B-HIS)



- **Cash Prize:** \$1,700
- **Team Members:** Lorin Harris and Mulenga Malama (University of Pittsburgh), Amir Khamidov (Carnegie Mellon University)
- **Solution:** Team Fort Duquesne proposed B-HIS to directly address the crisis of caseworkers spending more time on administrative tasks than with clients. B-HIS would support staff by automating administrative overload through drafting case notes, tracking deadlines and summarizing records, and act as an early-warning system by analyzing narrative notes to proactively flag escalating risks (e.g., substance use, suicidal ideation) and providing actionable recommendations. Trained on ACDHS's own de-identified data, B-HIS would integrate with existing systems like the Allegheny Family Screening Tool (AFST), creating a virtuous cycle where AFST's predictive risk scores inform B-HIS's interventions and B-HIS's outcomes data refine AFST's accuracy. This human-in-the-loop solution empowers caseworkers to focus on high-touch care, transforming ACDHS from a reactive documenter of crises into a proactive preventer of harm. The result would be a more efficient workforce, reduced preventable tragedies, and a stronger safety net for Allegheny County's most vulnerable residents.

CONCLUSION

The Local Government Case Competition continues to demonstrate the value of engaging graduate students in real-world public-sector problem solving. The 2025 teams delivered thoughtful, creative solutions that reflect a deep understanding of the challenges facing Allegheny County and its residents. Their proposals explored innovative uses of LLMs to improve government efficiency, strengthen oversight and enhance service delivery—ideas that can inform ACDHS's ongoing work while inspiring the next generation of leaders committed to advancing human services.

By inviting students to tackle complex issues with fresh perspectives, the competition serves a dual purpose: generating actionable ideas for ACDHS and partner organizations and introducing emerging professionals to the complexity and impact of public-sector work. Each year, this event reinforces the importance of innovation, collaboration and equity in addressing longstanding challenges and improving the lives of Allegheny County residents.

APPENDIX A

APPENDIX A: OTHER TEAMS AND SOLUTIONS

Andy Warhol Team

- **Members:** Ashley Kelley (Temple University), Chinmaya Lele (Robert Morris University), Ekhorse Aghahowa (Chatham University)
- **Solution:** *Civitas* — An AI-powered case tracking and summarization tool that consolidates fragmented data from systems like KIDS and MPER into a secure dashboard. By applying policy rules and structuring narrative notes, Civitas aims to reduce documentation time by 40%, improve accuracy and enhance transparency for child welfare cases. This solution strengthens court readiness and improves family satisfaction.

Fern Hollow Team

- **Members:** Adeleye Mesogboriwon (Carnegie Mellon University), Hanning Wang and John El Berch (University of Pittsburgh), Taylor Raszman (Penn West University)
- **Solution:** *The Three Rivers Initiative* — Uses AI agents to reduce administrative burdens and optimize workflows across ACDHS programs. Initially focused on housing-related challenges, the initiative demonstrates how AI can streamline tasks, reduce redundancy and improve resource navigation, with potential for cross-agency expansion.

Fort Pitt Team

- **Members:** Avery Trinidad, Nii Brown, Nya Griffin-Ulibarri (Carnegie Mellon University), Nayraa Sethi (University of Pittsburgh)
- **Solution:** *Binti AI Tools* — A HIPAA-compliant solution that automates case note drafting, summarizes narratives and supports court reporting. Already used by agencies nationwide, Binti can reduce documentation time by up to 50%, improve consistency and save Allegheny County an estimated \$125,000 annually.

Greenfield Team

- **Members:** Brian LaVoie, Obiajuru Nwadiokwu, Racheal Jones (Carnegie Mellon University), Pranav Balani (University of Pittsburgh)
- **Solution:** *NoteMate* — An AI tool that integrates speech-to-text dictation and a streamlined interface to simplify case note documentation. By improving note quality and preserving institutional knowledge, NoteMate reduces administrative burden and supports better training for new caseworkers.

Highland Park Team

- **Members:** Anushri Gade (Carnegie Mellon University), Aubrey Lewis (Chatham University), Michael Surh, Milena Rylatt (University of Pittsburgh)
- **Solution:** *Keystone Document System* — Uses LLMs to consolidate complex project data into standardized summaries for easier onboarding and project management. The two-phase implementation plan includes testing for reliability and training users, with strong security protocols to mitigate risks.

APPENDIX A

Homestead Grays Team

- **Members:** Sadman Sakib, Rahul Soman (University of Pittsburgh), Chris Oueis, Rahul Tejannavar (Carnegie Mellon University)
- **Solution: CareLink LLM** — An AI-powered system that transforms the Director’s Action Line into a real-time, multilingual crisis response platform. Features include call transcription, sentiment analysis and intelligent routing, projected to reduce response times, improve first-call resolution, better detect crises and ensure more equitable service delivery.

Hot Metal Team

- **Members:** Samuel De La Paz, Sheyla Street, Clyde Huang (Carnegie Mellon University)
- **Solution: Allegheny Pulse** — An AI-powered mental health journaling tool that converts qualitative notes into actionable insights and visualizations, enabling proactive interventions and better tracking of client progress across fragmented systems. By combining advanced analytics with user-friendly reporting, Allegheny Pulse strengthens proactive mental health interventions and enhances County-wide behavioral health outcomes.

Rachel Carson Team

- **Members:** Johanna Fickel, Julius Gibson, Kriti Samnotra, Mahima Batheja (Carnegie Mellon University)
- **Solution: Proactive Outreach System** — Uses RAG architecture and LLMs to predict risks, send alerts and recommend services for transition-age youth being served by the Office of Developmental Supports. Features include automated checks for eligibility, documentation and scheduling to reduce delays and improve care coordination.

Rankin Team

- **Members:** Nandita Kannapadi, Vashishth Doshi, Vi Nguyen, Xavier Smith (Carnegie Mellon University)
- **Solution: AI Policy Assistant** — Provides instant, policy-compliant answers from ACDHS documents to reduce delays and improve compliance. Saves time, supports informed decision-making, and includes safeguards for accuracy and ethical oversight.

APPENDIX B**APPENDIX B: ORGANIZERS AND VOLUNTEERS**

The Local Government Case Competition is made possible through the dedication of ACDHS staff who contribute their time, expertise and energy. The individuals listed below played an essential role in planning the event, supporting student teams and ensuring a successful competition experience.

Event Organizers

These staff members led the design, coordination and execution of the 2024 Case Competition:

- Alex Jutca, Office of Analytics, Technology and Planning
- Kate Vander Wiede, Office of Analytics, Technology and Planning
- Cassandra Alexander, Office of Analytics, Technology and Planning

Staff Volunteers and ACDHS Fair Participants

Many ACDHS staff contributed to the competition by volunteering at the event, participating in the ACDHS Fair, or supporting student teams throughout the week. Their involvement reflects the department's commitment to collaboration, innovation and community engagement.

Area Agency on Aging

Robin Rafferty
Mary Peterson

Analytics, Technology and Planning

Colleen Cain
Michael Affare
Ben Schenck
Nate Brooks
Anna Kapolka
Aly Caito
Jonathan Rainey
Ethan Goode
Ashli White
Maddie Coppola

Office of Administration

Loren Ganoe
Rebecca Reynolds

Office of Behavioral Health

Melissa Medice
Andrew O'Rourke

Children, Youth and Families

Betsy Caroff

Office of Community Services

Jake Hirsch
Ashley Woolheater

Office of Developmental Supports

Brenda Bulkoski