



MOPS Mobile and IoT for the Planet and Society Research Group

What We Do

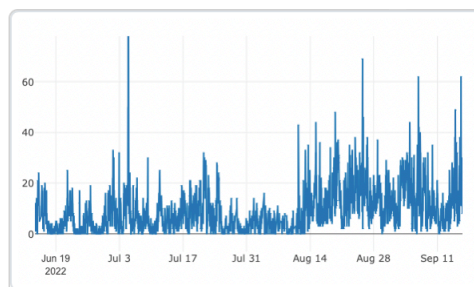
Dr. Krupp was the faculty advisor for MOPS and was very proud to work with a great team of students that made a meaningful impact with their research. He recently accepted a position at Case Western Reserve University where he will continue his work in Fall 2024. You can reach him at his website: krupp.dev

Our research group focused on various topics around Mobile and Internet of Things and how these areas can be used to benefit society and our planet. We are an undergraduate research team at Baldwin Wallace University within the Computer Science department.

Who We Are

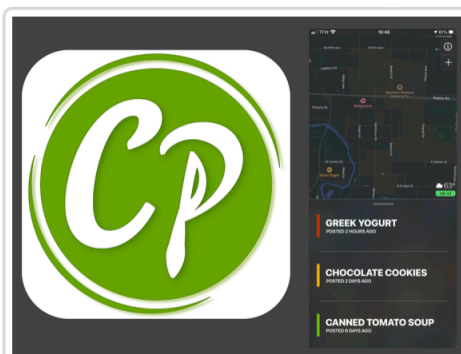
- [Brian Krupp - Faculty Advisor](#)
- [Julia Gersey '24](#)(AQIoT and Campus Plate)
- Justin Verhosek (AQIoT and Campus Plate)
- [Matthew Oros '24](#)(AQIoT)
- Joshua Buxton (AQIoT and Campus Plate)
- Vivian Somes '24 (AQIoT)
- Jim Collado '24 (AQIoT)
- Alex Macko-Dobrovic (AQIoT and Campus Plate)
- Hannah Ogden (AQIoT)
- Lexi Kumar (Swim Coach)
- Carrie Eierman '23 (DEI)
- Christian Pedersen '23 (Campus Plate)
- Terrell McDowell '22 (Campus Plate)
- Dan Fitzgerald '21 (Campus Plate)
- Dylan Johnson '21 (Campus Plate)
- Joshua Hadden '21 (AppAware)
- Malik Matthews '21 (AppAware)
- Emily Timko '20 (EMPAware)
- Kyle Cox '20 (EMPAware)
- Billy Hicks '20 (EMPAware)
- Malik Bursey '20 (EMPAware)
- Chris Banfield '20 (EMPAware)
- Yongzhe Wang (EMPAware)
- Briana Laszlo '20 (EMPAware)
- Dan Jesensky '18 (SPEProxy and EMPAware)
- Amanda Szampias '18 (SPEProxy)
- Tyler Rupert '18 (Tready)
- Kurt Wolfe '18 (Tready and EMPAware)
- Georgina Hasrouni '18 (Tready)
- Jacob Thornberry (EMPAware)
- Conner Hartup (EMPAware)
- Bryan Istenes (Tready)

Projects



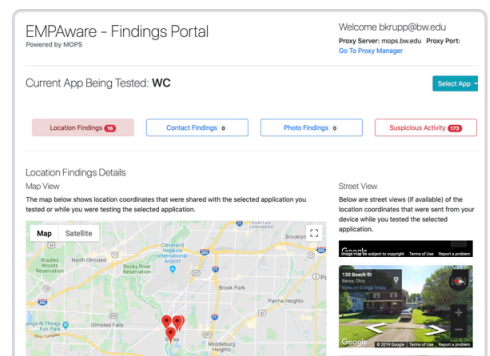
AQ IoT

Interdisciplinary research project that focuses on providing fine-grained air quality sensing in urban environments. Current test deployment in Slavic Village through partnership with PCs for People.



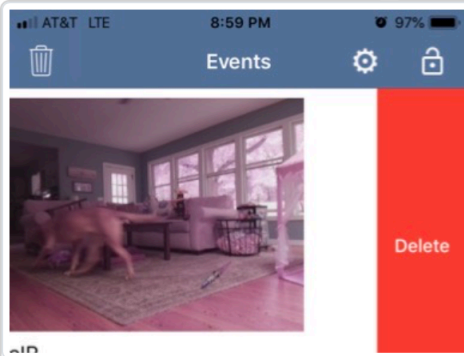
Campus Plate

Interdisciplinary research project funded by the EPA to help reduce food waste and hunger on college campuses.



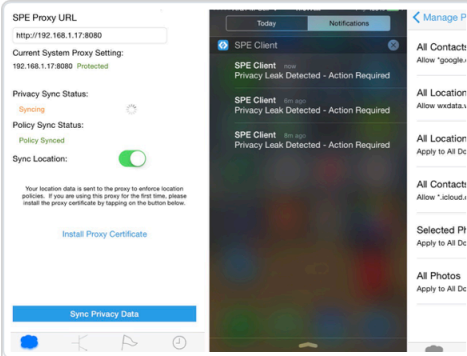
EMPAware

Research project to provide users with Enhanced Mobile Privacy (EMP) awareness in how apps use their data.

[Go to Test Deployment Page](#)[Go to Campus Plate](#)[Go to Paper](#)

Tready

An open source home security project using Raspberry Pis

[Go to Project](#)[View iOS App](#)

SPEProxy

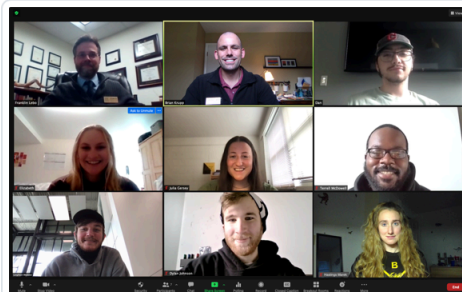
A research project to provide enhanced mobile security and privacy controls to users.

[More Info](#)

Team Photos



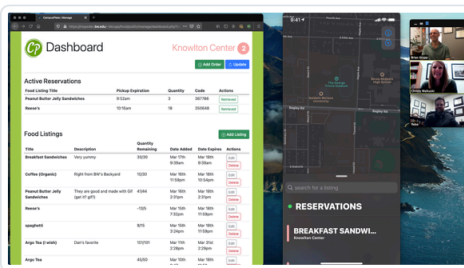
Julia Presenting at Cleveland Big Data Meetup



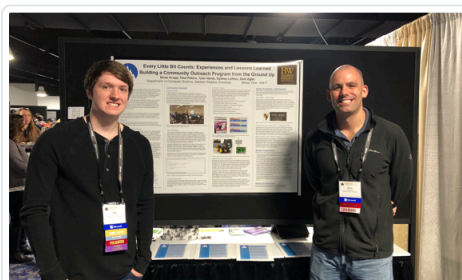
CampusPlate 2020-2021 Team



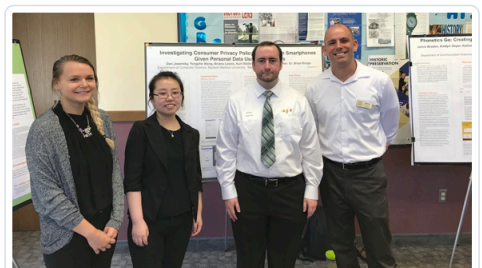
CampusPlate team being interviewed by local news station



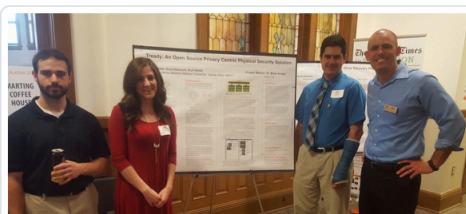
Preparing for Campus Plate Release



Presenting work on CS Education @ SIGCSE



Presenting work on EMPAware @ Ovation



Presenting work on Tready @ Ovation

News

- Julia Gersey wrote an article that was accepted to ACM XRDS on our research group! [MOPS Research Group Empowers Communities Baldwin Wallace University](#)
- Our paper "Pilot Study of Deploying IoT Micro Air Quality Sensors in an Urban Environment: Lessons Learned" was accepted to [ACM Midwest CCSC 2023](#)!
- Our grant proposal to NSF's Smart and Connected Communities Program is going to be funded! This research will investigate fine-grained air quality monitoring on an IoT platform in urban environments.
- Our poster "Towards Fine-Grained Air Quality Sensing in Urban Environments" was accepted to [ACM SenSys 2022](#)!
- Our paper "Campus Plate: Connecting Students on College Campuses to Reduce Food Waste and Food Insecurity" was accepted to [ACM RACS 2022](#).
- Julia Gersey is highlighted in an [article](#) for a scholarship she was awarded through the NASA/Ohio Space Grant Consortium (OSGC) that will investigate low-cost air quality monitoring on an internet of things (IoT) platform.
- Our paper "Fine-Grained Air Quality Monitoring with Low-Cost Sensors and IoT: Trends, Challenges, and Future Directions" was accepted to [IEEE SpliTech 2022](#).
- Our poster "Campus Plate: Reducing Food Waste and Food Insecurity on College Campuses using Smartphones" was accepted to [ACM COMPASS 2022](#).
- Our research paper on "Rethinking the Limits of Mobile Operating System Permissions" was accepted to [Data Privacy Management 2021](#).
- Our research on "An Analysis of Strengths and Weaknesses of TLS Utilization in iOS Applications" was accepted to [IEEE STWiMob 2021](#)
- Our research on "An Analysis of Web Tracking Domains in Mobile Applications" was accepted to the 13th ACM Web Science Conference 2021 (WebSci'21) [WebSci 2021](#)
- Presented our research on "EMPAware: Analyzing Changes in User Perceptions of Mobile Privacy on iOS with Enhanced Awareness" at the 7th ACM International Workshop on Security and Privacy Analytics [IWSPA 2021](#)
- Our research was recently highlighted in several news stories: [News Channel 5](#) and [Spectrum News](#).
- We were recently awarded a grant from the EPA P3 program to research how to reduce food waste and hunger using a mobile solution. [EPA News Release](#) [News Story](#)
- Interview with Cleveland.com on Mobile Payment Solutions [View Article](#)
- Opinion Posted on Columbus Dispatch on Facebook [article](#)
- Presented our research paper on Tready, an open source home security project. More information can be found [here](#)
- Our research appeared on [Is your smartphone listening to your conversations?](#)
- Our research appeared on [14 News Special Report: Spying Phone](#)
- Our research appeared on [Academic Minute](#)
- Research group interviewed on Channel 19 on mobile privacy issues: [15 popular apps Baldwin Wallace University found sells your personal data without permission](#)
- Interviewed for story on #DeleteFacebook Movement [Facebook Scandal](#)
- Talked on Sound of Ideas on WCPN about the #DeleteFacebook Movement [Facebook Backlash - Sound of Ideas WCPN](#)
- Story published on our research in mobile privacy: [How to stop phone apps from spying on you](#)
- Presented our research at IEEE UEMCON. Paper available [here](#).
- Article on our research: [Researchers Expose Secret Misuse of Personal Data by Mobile Apps, Create Solution to Help Consumers](#)
- Article on our research in CACM: [Researchers Expose Secret Misuse of Personal Data by Mobile Apps, Create Solution to Help Consumers](#)
- Article on Research Published: [STUDENT, FACULTY RESEARCHERS EXPOSE SECRET MISUSE OF PERSONAL DATA BY MOBILE APPS](#)
- Our request for Google Cloud Platform credits via the Google Cloud Platform Education Grants program has been approved!