



# Economic Impact

The WPI Office of Technology Commercialization (OTC) works to accelerate the transfer of WPI discoveries from the lab to the market for the benefit of society on a local, national, and global scale. Since 2012, WPI technologies and resulting local and regional spin-out companies have employed more than 400 people and







raised approximately \$1 billion in investment. Along with providing quality jobs to local and regional residents, these investments highlight that Worcester and the surrounding region can successfully support new technology startups, which will attract more interest and investment in the future.

## WPI startups 2022-2023

335 Employees and more than \$9.7 million in capital raised



## WPI Contributions to Worcester in 2023

					
<b>14,832</b>	<b>\$5.6 M</b>	<b>\$766,838</b>	<b>\$13,891,133</b>	<b>\$1,239,228</b>	<b>\$723,261</b>
Total Hours of Community Service	Total Amount of College-funded Grants and Scholarships to Worcester Residents	Payment in Lieu of Taxes	Total Purchasing Expenditures Paid to Worcester Suppliers and Vendors	Real Estate Taxes Paid to Worcester	Water/sewer fees paid to City of Worcester

# WPI Student Team Helps Food Pantry Go Digital

For over 30 years, the El Buen Samaritano Food Program (EBS) has served the Worcester community by providing food and clothing to those in need. It is staffed entirely by volunteers and serves roughly 500 families each month. Since its founding in 1991, the organization has used a pen and paper system to track the resources they provide and collect demographic information on their clients which enables EBS to secure grant funding and receive food from groups such as the Worcester County Food Bank.

When EBS decided to upgrade to a digital system to collect, store, and present this data to improve the

efficiency of their operations, they worked with a WPI student team through the Worcester Community Project Center to identify and implement a lasting digital solution.



# Thrive Food Pantry Opens with Help from WPI Students

Through the Worcester Community Project Center, Lydia Ellen Tonani '23 and her team members developed long-term sustainable plans for a Thrive Food Pantry in Worcester that will fight food insecurity and assist the autism spectrum disorder, intellectual disability, and developmental disability population in the region. The Thrive Food Pantry opened in October 2022, thanks in part to the contributions of the WPI student project team.

Thrive Support & Advocacy, founded in Marlborough, Mass., during the 1970s, is a non-profit organization dedicated to empowering, advocating for, and assisting youth and adults with autism spectrum disorders, developmental disabilities, and intellectual disabilities.



Sean Rose, Worcester City Councilor and president and CEO of Flourish at Thrive, cuts the ribbon at the opening of the new Flourish at Thrive Food Pantry on Grove Street in October 2022.

Thrive's mission is to help their constituents and their families not only survive but thrive regardless of their surrounding circumstances.

To develop effective, sustainable plans for the Thrive Food Pantry, Tonani and team focused on four primary objectives: utilizing demographical data on the population that the project is assisting to assess their nutritional and accessibility needs; connecting with nearby food pantries to better understand effective operating procedures; developing precise space and inventory plans, staffing schedules, blueprints, and other deliverables for the food pantry while considering the sponsor's available space and budget; creating partnerships with campuses, markets, and other organizations for the food pantry to continue functioning after the project's completion.



Congressman Jim McGovern D-MA joined the festivities at the opening of the Flourish at Thrive Food Pantry, created with the help of a WPI student project team.

# WPI Professor Leads Citizen Scientists in City Heat Mapping Effort

In July 2022, Stephen McCauley, associate professor of teaching in The Global School at WPI, launched a heat mapping initiative in Worcester. He coordinated a citizen science effort of volunteers collecting heat and humidity data. Their partners at CAPA Strategies used the data to develop maps of heat distributions in the city in the morning, afternoon and night.

“We also developed a heat vulnerability index (HVI) for the city, which estimates which neighborhoods and buildings in the city may be most heat vulnerable,” McCauley explains. “The goal of this work is to provide resources that help guide heat health interventions by planners and community organizations.”

The maps show that temperatures in the city can vary by up to 14 degrees F at the same moment based on the characteristics of the neighborhood environment, McCauley adds. High temperatures become especially dangerous during a heat wave, when temperatures remain high—especially at night—for several days.

According to the Environmental Protection Agency, excessive heat events are particularly dangerous and can result in above-average rates of mortality. From 2004 to 2018, the Centers for Disease Control and Prevention recorded just over 10,000 heat-related deaths in the United States.

“The difference in heat across the city is largely

explained by the amount of vegetation and tree cover in neighborhoods. Beyond this difference in physical heat, neighborhoods and individual buildings further vary in terms of heat vulnerability because of things like age, income, prior health conditions, quality of the buildings, and so on,” he says. Not surprisingly, the most heat vulnerable neighborhoods are in the inner city and contribute to the environmental justice concerns those neighborhoods face.

McCauley, who has been working closely with Luba Zhaurova from the City’s Department of Sustainability and Resilience and is now preparing a report that presents the heat maps and heat vulnerability with highlights in areas where interventions would be most beneficial. “We focus on two types of interventions: street tree planting and retrofitting old residential buildings to make them more comfortable in extreme heat.”

He hopes to elevate concern for heat health in the city and provide practical tools that help move interventions forward to reduce heat risk while also addressing environmental justice issues.

“I’d like to contribute to a growing discourse around the dangers of extreme heat, the inequities around who experiences this risk, as well as the possibilities for creating a more comfortable city for everyone by addressing these heat risks.”





## Serving Refugee Communities

During the Afghan refugee influx into Worcester in 2021-2022, a team of WPI students, faculty, and staff in the WPI Business School stepped forward to help, creating the Worcester Together Refugee Response website. Worcester Together, a citywide partnership that was initially established to support the region's Covid-19 response, relief, and recovery efforts, continues to address long-term community needs. WPI's Small Business Digitization Services, in collaboration with Noreen Smith who led resettlement efforts on behalf of the United Way and Worcester Together, was asked to develop a website to act as a hub for Afghan refugee resettlement efforts as part of the Worcester Together mission.

The Small Business Digitization Services (SBDS) Program was launched in May 2020 in response to the pandemic-driven demands of businesses to rapidly pivot from in-person to online services. SBDS is managed by Senior Director Sandy Wellinghoff in partnership with the Massachusetts Small Business Development Center at Clark University and the Center for Women and Enterprise. It provides free digital service consulting to small businesses and non-profits to help them transition to a digital revenue or operating model. SBDS student teams serve as digitization consultants, helping these organizations by identifying resources, implementing solutions, providing training, and determining sources

for future support.

Due to the success of SBDS, the WPI Business School has expanded the program to provide services to more clients, with a particular focus on minority-owned small businesses and non-profits. Thus far 70 WPI Business School major and non-major students have gained real-world consulting experience through these services. SBDS has helped over 70 organizations create or revise their websites, optimize search engines, improve scheduling systems, and improve ecommerce, marketing, and branding. Of these 70 firms, 38 are women-owned and 19 are from underrepresented populations.

"The result is a tremendous win for central Massachusetts small businesses and WPI students," Wellinghoff says. "Businesses have realized cost and time savings by leveraging the expertise of students utilizing the latest technologies in deployed solutions while working with skilled WPI advisors and staff. Students have gained experience by working directly with the client, getting real-world experience which they can add to their resume." In addition, Wellinghoff says, as students engage in local efforts, students grow connected to the community and may be more likely to remain in Massachusetts post-graduation.

# Ascentria Care Alliance

## Benefits from WPI Collaboration

Ascentria Care Alliance strives to break the cycle of poverty and build thriving communities where everyone has the chance to achieve their full potential, regardless of background or disadvantage. Through its many locations throughout the region, Ascentria serves children, youth, and families; persons with developmental disabilities and mental illness; refugees, including unaccompanied refugee minors; and older adults.

The primary focus for Ascentria is on settling the refugee families and providing the care and support they need to start afresh in this new world. With global unrest and emergency evacuations requiring refugees to be resettled in the New England region, there has been a need for Ascentria to rapidly grow its size and scale of operations, from number of airport pickups at short notice, to expense reports, contractor engagements, reporting requirements, contract management and compliance.

The leadership at Ascentria and the WPI Business School developed a proposal to streamline and enhance the operational framework to support Ascentria's growing operations through the Business School's Small Business Digitization Initiative. Led by WPI Assistant Dean of Business Programs, Dr. Sandhya Balasubramanian, the project involves bringing efficiencies to Ascentria's contract management and reporting processes. WPI Business School students are working collaboratively with Ascentria team members to process map workflows,

create in-house solutions for contract renewal alerts, and seamless financial oversight mechanisms to optimize fund usage. Ascentria is also interested in creating a simplified user interface to facilitate easier data capture and integration of operations to support functional experts and point-of-care providers.

"This is a classic example of the challenges many a growth focused non-profit faces. They need to balance their time between working on their mission-focused humane care while balancing operations, logistics, finances and reporting needs that every business must manage at scale," says Balasubramanian. "The WPI Business school student team that works on this project includes undergraduate and graduate students Jackson Lingo, Roshni Harish, Ujwal Kumar, Aameer Shaikh, and Arafat Ahmed, who combine their diverse technical skills and business experience to support the digitization and process optimization efforts at Ascentria."

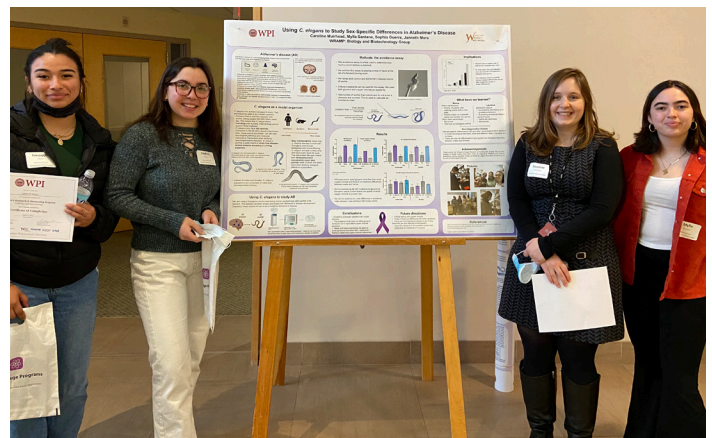
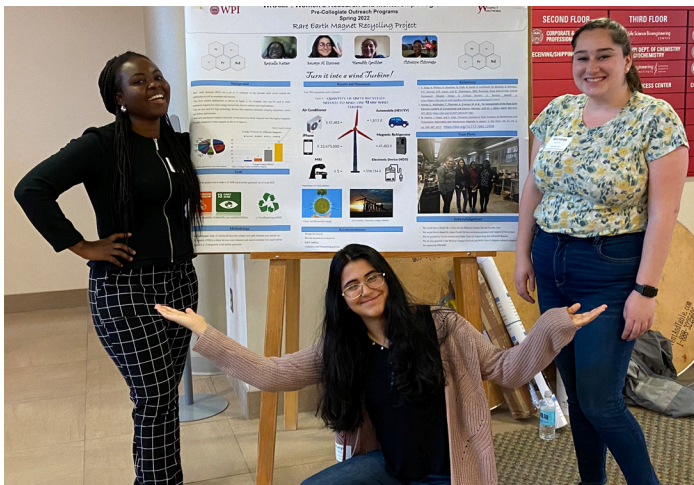
The goal of the Small Business Digitization Initiative is to help local companies and non-profits succeed by providing support in areas they have a need. "In doing so, we fulfill a piece of our pledge to the WPI Business School's mission—and the university's mission—that our students will be prepared to be adaptive leaders who are capable of creating sustainable solutions," says Debora Jackson, dean of the WPI Business School, "and that includes civic engagement and supporting our community."

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— Dr. Sandhya Balasubramanian

# Women's Research and Mentoring Program (WRAMP)

WRAMP, a multi-tiered mentorship program supported by funds from the WPI Women's Impact Network, engages local high school women and matches them with WPI women undergraduate students who are working on a research project. WPI female graduate students provide lab teacher-training to the undergraduates and provide mentorship. This allows the high school participants to see themselves in the lab in the future. In 2021-2022, WRAMP served 23 high school girls from a variety of schools, including Burncoat, Doherty, North, South, University Park, and Worcester Tech.



# WPI Students Part of the Worcester Community

You never know where you'll see WPI students participating in Worcester community life throughout the year. Here are just a few of the places we caught them in action during the 2022-2023 academic year.



Members of the Alpha Phi Omega national service fraternity at WPI helped deliver Girl Scout cookies.



Students added a personal touch to Meals on Wheels deliveries by writing individual notes to clients.



Students delivered care packages and notecards for clients of Elder Services of Worcester Area.



Sigma Alpha Epsilon at WPI once again held its Be the Match bone marrow drive.



During Work on Worcester Day, sponsored by WPI's Interfraternity Council and the Panhellenic Council, students helped move the Worcester Historical Museum to another building on Elm Street.



Tutoring at Elm Park Community School



Students installed a stairway path through Salisbury Park.

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