1. Executive Summary

The Collaboratory Against Hate (CAH) is an academic center created as part of a collective community response to memorialize the victims and survivors of the Pittsburgh synagogue tragedy on October 27, 2018. A partnership between Carnegie Mellon University (CMU) and the University of Pittsburgh (Pitt), the CAH launched in March 2021 with the mission to develop and support innovative multidisciplinary, interdisciplinary, and cross-university research aimed at understanding how extremist hate is generated, how it circulates in online and real-life spaces, and how it polarizes society and provokes harmful and illegal acts. The CAH sought to translate findings from this research into interventions that would inhibit every stage in the creation and growth of extremist hate and to minimize its destructive consequences.

The CAH is deeply grateful to the inaugural Co-directors, Kathy Blee, former Bettye J. and Ralph E. Bailey Dean of the Kenneth P. Dietrich School of Arts & Sciences at Pitt, and Lorrie Cranor, Director and Bosch Distinguished Professor in Security and Privacy Technologies of CyLab and the FORE Systems University Professor of Computer Science and of Engineering and Public Policy at CMU. For the last two academic years, they worked tirelessly to lay the foundation for the CAH in addition to their already very demanding roles. Some of their key accomplishments include engaging 300+ researchers from both campuses, establishing a Steering Committee as an initial governing body, setting up administrative operations at CMU's Dietrich College of Humanities and Social Sciences, and securing close to $1 million in funding from The Beacon Foundation and The Shapira Foundation. While their terms as Co-directors came to an end in March 2023, they agreed to stay until May to ensure smooth transition for the newly appointed Co-directors.

The second academic year for the CAH was highly productive and characterized by new leadership including the hiring of a new Executive Director and two new Co-directors, significant progress of seed funded research and a series of special events to help promote the center and engage collaborators. Because of this work, the CAH was able to add two new major research projects including faculty, researchers, and external partners: 1) Countering hate in eSports gaming with policy and technology tracks and, 2) Understanding political violence and polarization as symptoms of alienation and disenfranchisement.

The inaugural CAH team including Postdoctoral Researchers, Michael Yoder and Hana Habib, and Project Administrator, Jamie Scanlon, are also owed a debt of gratitude for managing research, projects and events critical to the growth of the center. The CAH conducted its first full day workshop in November 2022 focused on orienting research toward impact in tech company policy, education, and government. It included participants from both CMU and Pitt and across disciplines, as well as from non-profit groups and tech companies including Meta. The CAH also produced six speaker series events and collaborated in sponsorships with centers on related events such as Hacking4Humanity.

The CAH would also like to thank and acknowledge the advancement teams at CMU and Pitt for their support and connections to the philanthropic community. Through their efforts, the CAH leadership team have held multiple meetings with individuals and representatives from local and national foundations to discuss the mission of the CAH and encourage philanthropic interest. At the close of the 2022-23 academic year, the Fine Foundation committed a $50,000 grant to support the CAH education research work group. We are deeply grateful to the Fine family for the opportunity to meet in person at their annual board of directors’ dinner and for their generosity and partnership. This would not have happened without the support of the advancement teams.
2. CAH Leadership and Strategy

2.1 New Executive Director
A hiring committee for the newly created Executive Director role was established in June 2022. Susan Baida was hired and began November 2, 2023. Susan brings 30+ years of experience in the areas of Diversity, Equity and Inclusion, tech entrepreneurship, global marketing for Fortune 500 companies, and nonprofit management. She came most recently from UPMC where she served as Director of Diversity, Equity and Inclusion and was responsible for strategic development and implementation of community engagement, health equity, and workforce diversity initiatives over a system of 40+ hospitals and 92,000+ employees.

Prior to UPMC, she co-founded a healthcare technology venture, eCareDiary, to address the national phenomenon of increasing family members caring for aging loved ones. As an entrepreneur, she gained relevant fundraising management and startup operational experience. During the first half of her career, she served as a global marketing executive for corporations such as Avon, Estee Lauder Companies and Starwood Hotels where she increased brand market share and relevancy through the launch of new business franchises and communications campaigns. Her community engagement experience includes an appointment to Manhattan Community Board (an advisory board to the NYC Mayor’s office) where she chaired the Human Services Committee for 7 years and serving on the board of directors for nonprofits such as the National Healthcare Diversity Council, Casa San Jose, Women’s Center and Shelter of Pittsburgh, Pittsburgh Women’s Alliance, and La Promesa Foundation.

2.2 New Co-Directors
Kathy Blee and Lorrie Cranor’s terms as Co-directors concluded in March 2023, and they graciously agreed to stay on until May 1. A new hiring committee was established led by Lucy Russell, Vice Provost and Chief of Staff of University of Pittsburgh, and Richard Scheines, Dean of Dietrich College of Humanities and Social Sciences of Carnegie Mellon University. Lisa Nelson, Associate Professor, Graduate School of Public and International Affairs, was appointed as the Co-director from Pitt. Mark Kamlet, University Professor of Economics and Public Policy and Provost Emeritus, was appointed as the Co-director from CMU. Both Co-directors began May 1, 2023.

Mark has served in several leadership positions at CMU, including department head of SDS, dean of the Heinz College, provost and chief academic officer, and interim director of the Institute for Politics and Strategy. Throughout his career, he has explored the role and impact of technology on education. Mark is an elected fellow of the American Association for the Advancement of Science. He earned his bachelor’s degree in mathematics from Stanford University, and a master’s degree in mathematical statistics and a Ph.D. in economics from the University of California, Berkeley. He serves on the Board of Directors for Highmark and Jewish Healthcare Foundation.

Lisa specializes in the field of science, technology and society. She was a co-principal investigator on a National Science Foundation grant to explore the societal perceptions of biometric technology and has been the recipient of a John D. and Catherine T. MacArthur grant. While at Pitt, she served on the Department of Homeland Security’s Data Privacy and Integrity Committee. Her current research explores social networking technologies and considers fundamental questions about information ethics and its enforcement on the internet in an open society. She holds a Ph.D. and J.D. from the University of Wisconsin-Madison.

2.3 Strategic Plan
In the summer prior to the publication of this annual report, the CAH and its new leadership team reviewed research project output, academic motivations, community perceptions, industry realities, and philanthropic expectations and assessed that some pivoting would be required in the pursuit of new projects and impact on hate-fueled violence. The CAH has rearticulated its vision, mission and strategic road map which will be featured in the next annual report.
CAH developed two new governing charters for the Steering Committee and the External Advisory Committee and began identifying new members for the External Advisory Committee.

2.4 Budget Management
CAH’s budget management was transferred from CMU’s CyLab to the Dietrich College of Humanities and Social Sciences.

2. CAH Research Project Updates

2.1 CAH Working Groups

Working Group 1: Understanding and Countering Hate through Computational Analysis

CAH distributed $100K seed funding to Co-chairs, Kathleen Carley and Yu-ru Lin. Yu-ru Lin, Co-chair of this work group, earned a Foundational Integrity Research award from Meta Platforms for her research on how conspiratorial content spreads online in which she hopes to identify communities that are particularly vulnerable to conspiratorial content. Dr. Lin has also been selected as the principal investigator, along with Rebecca Hwa, to lead their team project with the Department of Defense (DoD). This project, “Characterizing and Countering the Normalization of Extremism and Communal Violence in Cyber-SocialSpace”, is with the DoD’s Minerva Research Initiative which brings research collaboration between the military and universities to improve national security.

Maarten Sap, a new Assistant Professor at CMU’s School of Computer Science, was engaged with CAH. He recently earned a Dynabench Data Collection and Benchmarking Platform award from Meta Research to create context-aware toxicity-detection systems for digital content.

Extremist messages of hate are unfortunately present in everyday digital interaction on social media platforms. While hate groups have found ways to actively spread extremist political and cultural ideologies online, much of hateful content on social media is disguised. Instead of overt messaging, extremist views are catching users’ attention through more subtle, seemingly innocuous elements. Adolescents are avid consumers and creators of social media content. In fact, social media could be considered a critical developmental context due to its influences on youth’s perception of reality and daily interpersonal relationships. Adolescence is a developmental period when knowledge of social systems is still developing, along with cognitive and socio-emotional skills related to perception, awareness, and empathy. Therefore, adolescents maybe vulnerable to unwittingly spreading hateful content and racist sentiments because they either do not understand the connection of racist sentiments to extremism or they dismiss it as an inevitable part of participation in social media. In light of these growing concerns, it is critical that we determine ways to help social media users to identify and decode hateful elements within trending content.

The TikTok project was designed to answer the following research questions: (1) How can we identify and classify audiovisual racist elements in viral TikTok videos? (2) What are users’ motivations to participate in viral creation and redistribution of such content? (3) How can we educate users about and prevent (un-)intentional creation and distribution of racist TikTok content?

Towards addressing the first research question, the research team created two data dashboards each with 6,000 TikTok videos based on keywords related to anti-Black racism and to anti-Asian racism. The team then developed a coding scheme for this dataset and identified 102 videos that contained anti-Black racism. Coding the data set for elements of anti-Asian racism is in progress. Key outcomes of Phase I of the project is the finding that (1) racism is often disguised as humor in TikTok videos and (2) racist content is often generated by combining audio, visual and text elements in ways that avoid detection and removal via standard algorithms.

Working Group 2: Educational Interventions for Youth Project #1: The TikTok Project
Towards addressing the second research question, the research team conducted a qualitative interview study with 40 students at CMU and Penn West (ages 18-25). The team is in the process of developing a coding scheme to analyze the interviews. The insights from this qualitative analysis of interviews with TikTok users will inform the design of an educational intervention that is the focus of the third research question. The team has shared the preliminary findings from this project at three national conferences.

Extremist hate is a rising problem worldwide. One of the root causes of extremist hate is structured ignorance, or the idea that the world can appear quite different to individuals based on their position within social structures. In the United States, structured ignorance has contributed to lack of awareness of the omnipresence of systemic racism in modern American society and we are experiencing a clash rooted in structured ignorance that is increasingly tearing the fabric of our nation. For instance, at the same time as a number of states declared racism a public health crisis, other states potentiated structured ignorance by enacting legislation forbidding any discussion about race, racism, or inequity in public schools. Addressing these concurrent and interwoven crises will require multi-pronged solutions. The NextGen project was designed to address structured ignorance through a community-based intervention for youth that fosters (1) critical reflection (i.e., critical analysis of racial inequalities) and (2) motivation for action (i.e., perceived capacity to affect change and engage in actions that can affect change) with a focus on anti-Black racism in the United States.

The NextGen project consists of two phases. In Phase I, the research team developed a novel theoretical framework for the intervention and designed interactive learning materials. Specifically, we designed six learning videos to help children understand (1) the connection between the past and present manifestations of anti-Black racism in the U.S.; (2) the contributions of Black Americans to their own liberation and many facets of U.S. society including science, education, arts, politics, and sports; and (3) and the shared responsibility we have to take action against racism. We also designed conversation prompts and scaffolds to facilitate discussion of the information presented in the videos. Finally, we designed a battery of six tasks to measure pre- to posttest changes in children’s emotional state, children’s understanding of past and present manifestations of anti-Black racism in the United States as well as accomplishments and contributions of Black people, and motivation for action.

In Phase II of the project, we piloted our framework and learning materials with 26 racially diverse youth ages 8 – 18 at three different communities in and around Pittsburgh: Brookline Teen Outreach, Penn Hills Library, and Three Rivers Village School. Data analyses are currently in progress, but our preliminary findings suggest that the intervention we developed (1) is engaging, affirming, and appropriate for being administered in mixed age, mixed race, and mixed gender groups in community settings; (2) does not negatively impact participants’ emotional state, and (3) may improve participants’ knowledge of important events in Black history and present time. The research team was invited to present the preliminary findings of the NextGen Project at the annual Pittsburgh Racial Justice Summit in 2023.

The role of academic stereotypes in youth’s competence beliefs and academic achievement becomes salient during early adolescence. In particular, African American adolescents often report that they are aware of racist beliefs regarding who can be good at STEM, and they may even endorse these stereotypes when ascribed to them personally. The Digital Games Project was designed to help combat racial bias and stereotypes toward African Americans using a role-playing digital game. Playing digital games allows the player to take the perspective of someone else by metaphorically walking in that person’s shoes during gameplay. Research has found that taking the perspective of another can induce empathy, which in turn can improve a person’s attitudes towards other individuals and stereotyped groups. Additionally, a workshop facilitated by teachers in conjunction with the game place experience, can help youth acquire declarative knowledge related to racial biases towards increasing their bias literacy.

The Digital Game Project consists of two phases. In Phase I, the research team recruited students at the Entertainment Technology center at CMU to (1) co-design the digital game called "Power
Core Values” and (2) a facilitator’s guide for a workshop to accompany the game. In Phase II of the project, the research team piloted the game and the workshop with a group of 16 racially diverse 8th graders from the Northgate School District. Preliminary findings suggest that from pretest to posttest participants improved in their awareness of racial privilege and perceived awareness of experiences of discrimination with regards to self; there were no changes in perceived awareness of experiences of discrimination with regards to others and no changes in empathy.

Working group 3 was tasked with exploring the existence of extremism in the military and veteran communities. The group focused their efforts on better understanding the existing research on extremism in the veteran community. The first effort of the research group was to review the databases (PRIUS and CSIS) that are often used to support the finding that veterans are more likely than the general population to engage in politically motivated violence. The evaluation of these databases revealed that there is disparity in the statistical evidence among the databases used to support the claim that veterans are more likely than the general population to engage in politically motivated violence. The statistical variation is driven by several factors, including the use of indeterminate definitions of extremism used to capture the data, selective inclusion and exclusion of extremist events as well as reliance on internet reporting of events that is inconsistent across the time period that purports to support the rise in veteran extremism. Ultimately, the team did not find that veterans are any more likely than the general population to engage in politically motivated violence and that continued promotion of this narrative is damaging to the veteran community and is not productive for understanding the rise in political violence that is occurring more generally in society.

A second focus of this research was to deploy a thousand person survey of veterans. The survey, conducted by Amerispeak, explored the issue of extremism and the perceptions of it across groups and institutions in society. Because extremism is not a precise term and possessed no legal definition, the survey was designed to better understand how extremism is viewed by a group often characterized as susceptible to it. In addition to this survey, one on one interviews were conducted with veterans who identified as leaning left, right and center. The initial findings reveal that there are many groups and institutions in society that are perceived as staking out extreme positions or engaging in extremist actions. Perceptions of extremism were attributed to government, academia, and other groups in society. For the government, extremism was described as stepping outside of their constitutional role such as limiting free speech or engaging in surveillance or not holding groups equally accountable under the law for violence that occurred in the BLM and January 6 riots. Groups that were considered extreme were those that used criminal violence such as looting, arson or physical harm to vocalize their political points. Those groups considered extreme included BLM, Antifa and white supremacists. In addition, media and academia were considered to be extreme because of the ideological bias that tainted their coverage and depiction of facts. On this point, one characteristic of extremism was described as not allowing other viewpoints to coexist with others in society.

This working group was newly established this year. CAH connected interested researchers across academic disciplines with practitioners working to address abuse, harassment, hate speech and extremism in esports.

Two research direction areas were determined to address identity-based abuse in gaming chat:
- policy and best practices recommendations for game developers, platforms, and policymakers
- technology to study and identify instances of identity-based abuse in gaming chat.

Existing information was aggregated about hate speech and harassment in gaming chat, including user surveys, press coverage, and existing industry technology. IRB approval was granted to conduct a survey on experiences with hate in gaming chat for the Tekko Conference, a national anime conference with a large gaming component.
This new project investigates polarization and political violence with a novel approach. Most often political violence and polarization are viewed as stemming from problematic groups or identities. The present work sets out to understand political violence and polarization not as a cause of one particular group, but rather as a symptom of alienation and disenfranchisement with the institutions tasked with representing and addressing societal, political and cultural needs. In order to better understand the antecedents of political violence and polarization, we must be able to identify the sources of dissatisfaction with our government, institutions, culture and society and develop policy solutions to better address them. This approach is necessary because the current method of deploying interventions against particular groups which are associated with political violence and polarization - censorship, surveillance and targeted suppression – only heighten alienation and disenfranchisement and potentially make political violence seem like the only option. This project is needed to support a change in policy direction with the use of timely data gathering and analysis that will allow the researchers to gain insights and analyze trends which will, in turn, develop effective strategies for policy direction.

This project would be run under the auspices of the Collaboratory Against Hate (CAH), a cooperative research institution established between the University of Pittsburgh and Carnegie Mellon University. The working groups have been focused on political violence and remedies for it. The work of the CAH would be devoted to the creation of a clearinghouse of data, which would then inform the development and deployment of surveys, interviews, and qualitative/quantitative investigation of sources of dissatisfaction in society toward government, the private sector (financial, tech, etc.), media, educational institutions and systems of justice. The nationwide survey work, one-on-one interviews and detailed analysis of institutional failings would be conducted with respondents to develop a qualitative comprehension of the contributing factors to the cultural, political and societal dissatisfaction that lead to polarization, and alienation.

Research Partnership with ADL (Anti-Defamation League)

- **Improved Monitoring of Incels** (5 members) - We connected the ADL with a software developer familiar with online extremism to build a search tool for one of the most popular misogynist incels forum. This work also led to an ongoing collaboration with external researchers first looking at mentions and framing of identity groups on an incels forum, presented at the Workshop on Online Abuse and Harms.

- **Connections between COVID-related sentiment and extremism:** A group of summer interns (3 qualitative, 1 quantitative) worked with faculty on how COVID anti-lockdown and anti-vax sentiment were linked to extremist ideas, particularly antisemitism. The qualitative group manually coded a set of tweets that contained both COVID keywords and keywords likely to indicate antisemitism. We released a whitepaper on this work. The quantitative group looked at connections between online extremism and an offline dataset of hate-related events from the ADL (this ended up not being COVID-related). This work was presented at the International Workshop on Cyber Social Threats.

Post-doctoral Research Projects

- Hana Habib is conducting research related to the design of socio-technical interventions for combating online hate. One study in progress is a cross-cultural exploration of user perceptions of different fact-checking entities used to flag online misinformation. Another study in progress aims to integrate theory from social psychology into interventions for promoting civil discourse on social platforms.

- Michael Miller Yoder’s research studies the dynamic nature of hateful narratives online at a large scale with quantitative and computational methods. The aim is to develop more nuanced hate speech detection methods that take into account social and ideological context. One line of work focuses on white supremacist communications and networks. This work investigates how white supremacist narratives change across time periods, platforms, and within online and offline contexts. Another line
of work focuses on changing narratives within male supremacist online discourse; preliminary results suggest the incorporation of broader far-right narratives within misogynist online communities. Another area of research investigates the framing of antisemitic conspiracy theories online during the COVID-19 pandemic.

2.2 CAH Research Presented at Conferences


December 9, 2022 - United Nations: The United Nations Office on Genocide Prevention and the Responsibility to Protect held an event marking the International Day of Commemoration and Dignity of the Victims of Genocide and of the Prevention of this Crime, as established by the UN General Assembly resolution 69/323 of September 29, 2015. The event, held at the United Nations Headquarters in New York, was dedicated to the role of sport in countering hate speech and championing the prevention of atrocity crimes. The event launched the Plan of Action to Counter Hate Speech through Engagement with Sports, the GAME PLAN, developed by the United Nations Office on Genocide Prevention and the Responsibility to Protect in collaboration with the Eradicate Hate Global Summit Sports Working Group.

2.3 Disseminating Research

2022 Eradicate Hate Summit

- Kathleen Blee and Lorrie Cranor served on the executive steering committee.
- Hana Habib and Michael Miller Yoder organized a poster session showcasing eight CAH research projects.
  - The Spatiotemporal Reach of Hate Narratives - Ahmad Diab (Pitt), Michael Miller Yoder (CMU), Yu-Ru Lin (Pitt)
  - NextGen Project: Using Science of Learning to Combat Racism - Anna Fisher (CMU), Catarina Vales (CMU), Shawn Alfonso Wells (Pitt), Rachel Hopkins (CMU), Amanda Lee (CMU), Ming-Te Wang (Pitt), Liz Miller (Pitt), Christina Scanlon (Pitt)
  - The Relationship Between Antisemitism and COVID-19 Conspiracy on Twitter - Grace Garner, Madeleine McGrann, Maja Lynn (Pitt), Daniel Klug (CMU), Rachel Kranson (Pitt), Michael Miller Yoder (CMU)
  - Exploring Values-Based Interventions for Preventing Online Hate - Hana Habib, Likhitha Chintareddy, Geoff Kaufman (CMU)
  - Algostrategies of Hate: Identifying User Practices for Spreading Viral Racism on TikTok - Christina Scanlon (Pitt), Daniel Klug (CMU), Jeffrey Tienes & Jane Walsh (Pennsylvania Western University), Sheyda Demooei & Chelsie Hall (ViralMoment), Alice Huguet (RAND Corporation), Ming-Te Want (Pitt)
  - Research Needs for Countering Extremist Hate - Michael Miller Yoder and Hana Habib (CMU)
  - How Hate Speech Varies by Target Identity: A Computational Analysis - Michael Miller Yoder, Lynnette Hui Xian Ng, David West Brown, Kathleen M. Carley (CMU)

3. CAH Special Events

3.1 Workshop

CAH hosted its first full day workshop on November 4, 2022 at Carnegie Mellon University with members of the CAH community. The aim of the workshop was to foster further cross-disciplinary collaboration and generate novel research directions. Discussions at the workshop were grounded in the six themes of needed research for combating hate presented in a CAH whitepaper published in March 2022. The workshop featured a panel of speakers representing Global Project Against Hate and Extremism, Global Internet Forum to Counter Terrorism and Equimundo, lightning talks by CAH researchers, and engaging discussions about potential future research.
3.2 **Hacking4Humanity 2023**

Hacking4Humanity 2023 was held on March 18, 2023. CAH partnered with University of Pittsburgh’s Pitt Cyber Institute for Cyber Law, Policy and Security, Duquesne University’s Grefenstette Center for Ethics in Science, Technology and Law, and CMU’s IdeaS Center on a multidisciplinary hackathon for undergraduate and graduate students to develop new tech and policy solutions that mitigate online hate and create safer communities. CAH assisted with recruiting applicants on campus. Winners were as follows:

**Policy Track:**
- **Runner Up, Common Good Award:** “Tackling Online Hate with Hate Hygiene Index,” by Team PoRK: Peem Lerdputtipongporn, Natharat Mongkolsinh, Oravee Smithiphol, Pattamon Lekmanee (CMU)
  - **Grand Prize Award:** “Protecting Victims of Hateful, Non-consensual Deepfake Pornography (NDP)” By Team MERD NERDS: Myles Cramer, Ryan Druffner, Emmaline Rial, and Dan Rudy (Pitt)

**Tech Track:**
- **Runner Up, Common Good Award**
  - “Swipe to Post” by Team Hater Deflators: Emily Brozeski and Tessa Datte (Duquesne)
- **Grand Prize Award**
  - “SpeechWatch Video Browser Extension” by Mihir Dhamankar (CMU).

3.3 **CAH Speaker Series and Speaking Engagements**

- **December 2, 2022:** Dr. David Benedek, Professor of Psychiatry & Neuroscience, and Chair, Department of Psychiatry, Uniformed Services University School of Medicine, presented “Extremism in the Military: What we know and don't know”.
- **February 22, 2023:** Megan Squire, Deputy Director for Data Analytics and Open Source Intelligence at the Southern Poverty Law Center, presented, “Mean People with Bad Ideas: How data science can help in the fight against online extremism.”
- **February 19, 2023:** Dr. Kathy Blee and Dr. Rachel Kranson delivered presentations on “Countering Antisemitism” at Rodef Shalom Congregation’s Herzog Breakfast
- **April 6, 2023:** CAH met with the Defense Counterintelligence and Security Agency’s Deputy Director, Daniel J. Lecce, and Sara Stewart of the Department of Defense. This was part of a 2 hour presentation and discussion on research being conducted at the University of Pittsburgh related to veteran radicalization. Dr. Lisa Nelson and Dr. Ron Poropatich, CAH Work Group Co-chairs, and Noah Fair, CAH Researcher presented preliminary research findings on "Extremism and Hate-motivated Violence Among Active-Duty Military and Veterans"
- **April 4, 2023:** Amanda Nguyen, Founder of Rise, presented “Journey of Resilience: Amanda Nguyen’s Work in the Fight Against Asian Hate and Sexual Assault”.
- **April 20, 2023:** Phia Salter, Associate Professor of Psychology at Davidson College, presented “(Un)Knowing Inequality: A Critical Race Psychology Perspective on Engaging Systemic Racism”.

4. **Fundraising**

- Received the first of three annual installments of $200K from the Beacon and Shapira Foundations to support the CAH.
- Received a $50K grant from The Fine Foundation for the Education Interventions for Youth, work group 2’s “Next Gen Project.”
- Monthly meetings held with Josh Donner of the Shapira Foundation who generously provides feedback on the development of CAH strategy and connections to foundations and relevant nonprofit organizations.
- Monthly meetings established with CMU and Pitt advancement teams.