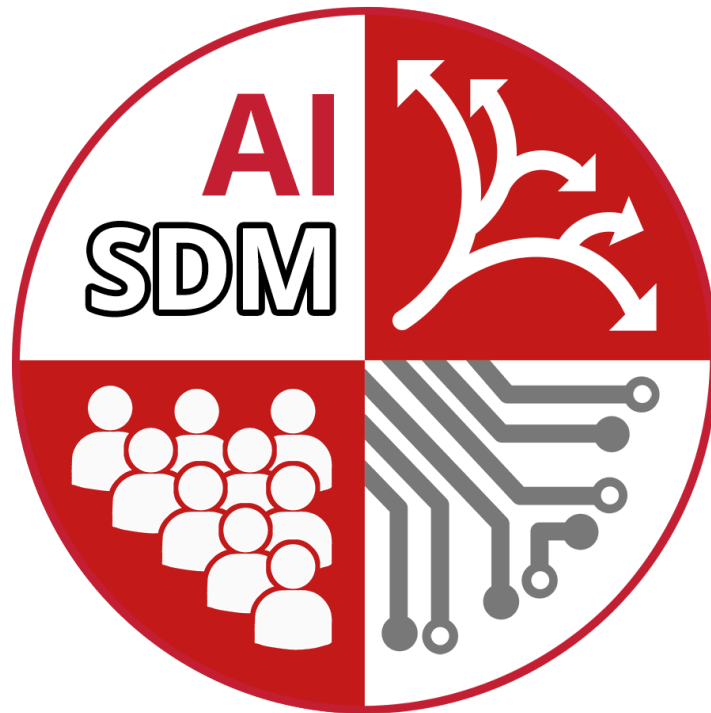


Student Onboarding Handbook

NSF AI Institute for Societal Decision Making (AI-SDM)

Updated December 2025



<https://www.cmu.edu/ai-sdm/>

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Welcome to AI-SDM!

Purpose and Motivation

The purpose of this document is to provide guidance to new students, postdoctoral associates, and staff members who are part of the NSF AI Institute for Societal Decision Making (AI-SDM). Following Year 1 of the grant, this onboarding document was compiled with input from current junior researchers to act as a resource for new students who are joining research or strategic impact activities conducted by the Institute.

What is an AI Institute?

The [National AI Research Institutes \(NAIRI\)](#) are a network of institutes funded by the National Science Foundation (NSF) in partnership with other government agencies, foundations, and corporations. The program was established in 2020 to support long-term fundamental research in artificial intelligence while also delivering on other objectives outlined in the [National Artificial Intelligence Research and Development Strategic Plan](#).

There are currently 29 NAIRIs funded by the NSF, the National Institute of Food and Agriculture under the U.S. Department of Agriculture (USDA-NIFA), and their partners. These institutes are interdisciplinary collaborations among top AI researchers from universities, government labs, and industry. They focus on a wide range of AI research topics, including:

- Foundational AI research
- Ethical and trustworthy AI systems and technologies
- Cybersecurity
- Weather/climate
- Agriculture
- Neuroscience
- Education
- Public health

The NAIRIs provide access to funding, computing resources, data, and expertise to researchers. They also help to train the next generation of AI researchers and to develop new AI technologies that can benefit society.

The AI Institutes are funded for 5 years at \$4M per year, for a total planned commitment to each Institute of \$20M. During the grant period, the Institutes are expected to make significant contributions in the above areas while forming the partnerships and collaborations that will ensure self-sufficiency after the term of the grant. There may be additional opportunities through NSF for follow-on funding, as well.

AI-SDM Overview

AI-SDM brings together AI and social science researchers to develop human-centric AI for societal good that leverages the power of data and operationalizes an improved understanding of decision sciences. Our researchers are developing AI technologies that augment, rather than replace, human decision-making capabilities in our societal use-case domains of disaster management and public health, two areas where complex, life-saving decisions are made under dynamic, uncertain, and resource-constrained scenarios. Techniques are used such as data-driven recommendation systems, personalized interventions, and causal/counterfactual reasoning to enable decision makers in disaster management and public health to make efficient and effective choices. Not only does AI-SDM have substantial research efforts, but the Institute is also training and upskilling the workforce at the intersection of AI and the decision sciences through targeted engagements with high schools, community colleges, universities, corporations, and government agencies, all the while promoting the potential for AI to have a positive impact on decision-making in society.

The primary on the AI-SDM is Carnegie Mellon University, which houses 14 of the Senior Personnel (SP). There are currently 10 subaward institutions (number of SP indicated in parentheses), as well as one institution that is a consulting partner:

- Boston Children's Hospital (1)
- Harvard University (4)
- Howard University (1)
- MITRE (2)
- Navajo Technical University (2)
- Penn State University (1)
- Texas A&M University (1)
- Florida State University (1)
- University of Washington (1)
- Winchester Thurston School (consultant) (2)

A total of 30 senior researchers from all organizations are involved in the grant, with a near-even distribution across three focus areas: Artificial Intelligence, Social Sciences, and Education. Each year, the AI-SDM leadership assesses whether the current mix of projects, personnel, and participating universities aligns with its vision and makes adjustments as needed.

Roles at AI-SDM (Faculty, Student, Postdoc, and Staff)

There are several roles for AI-SDM members defined below:

Faculty Roles

Senior Personnel (SP): Faculty members/staff from constituent universities who are listed as Investigators on the AI-SDM grant

PI/Director: Aarti Singh, Professor in the Machine Learning Department at CMU

Co-Director: Coty Gonzalez, Research Professor in the Department of Social and Decision Sciences at CMU

Co-PIs: Jeff Schneider, Research Professor within the Robotics Institute and School of Computer Science at CMU; Ariel Procaccia, Professor of Computer Science at Harvard; and Terri Adams-Fuller, Professor in the Department of Sociology and Criminology at Howard. In addition to the Director and Co-Director, the Co-PIs are a part of the management team

Co-Investigators: All Senior Personnel on the grant who are not PIs or Co-PIs.

Affiliated Faculty: Other faculty who are affiliated with the Institute and may or may not be partially funded by the grant

Thrust Leaders (TLs): SP who are responsible for leadership, management, and direction-setting of broad areas of the Institute.

Project Leaders (PLs): SP who are responsible for oversight of teams and reporting at the project level

Management Team: Consists of the Director, Co-Director, Co-PIs, Managing Director, and Education/Outreach Lead

Executive Committee: Consists of the Management Team and TLs

Student, Postdoc, and Staff Roles






Funded: Provided with full or partial salary/benefits support to work on an AI-SDM project

Unfunded: Not provided with salary support, but may be working on relevant AI-SDM projects









Affiliated: Students, postdocs, or staff who do not receive any financial support but may participate in AI-SDM events (seminar, brainstorming sessions, student activities, etc)

Personnel Overview:

Management Team

<p>Director</p>  <p>Aarti Singh CMU</p>	<p>Co-Director</p>  <p>Coty Gonzalez CMU</p>	<p>Managing Director</p>  <p>Norman Gottron CMU</p>	
<p>Co-PI</p>  <p>Terri Adams-Fuller Howard</p>	<p>Co-PI</p>  <p>Jeff Schneider CMU</p>	<p>Co-PI</p>  <p>Ariel Procaccia Harvard</p>	<p>Outreach Lead</p>  <p>Rebecca Nugent CMU</p>

Thrust Leads

<p>Public Health UC1</p>  <p>Maia Majumder Boston Children's</p>	<p>Disasters UC2</p>  <p>Robin Murphy Texas A&M</p>	<p>Adoption/Ethics CC1</p>  <p>Paul Lehner MITRE</p>	<p>Education/Outreach</p>  <p>Rebecca Nugent CMU</p>
<p>Human FT1</p>  <p>Coty Gonzalez CMU</p>	<p>Collective FT2</p>  <p>Aaditya Ramdas CMU</p>	<p>Autonomous FT3</p>  <p>Jeff Schneider CMU</p>	<p>Autonomous CC2</p>  <p>Kun Zhang CMU</p>

Staff



Norman Gottron
Managing Director
CMU
ngottron@andrew.cmu.edu



Jami Teets
Administrative Assistant
CMU
jteets@andrew.cmu.edu



Parker Werns
Project Coordinator
CMU
pwerns@andrew.cmu.edu

Additional AI-SDM faculty and students can be found on the [Who We Are](#) section of the AI-SDM website.

Thrust/Project Matrix

Research

AI-SDM's research efforts are broken down into 7 distinct research thrusts: 2 Use-Case Thrusts (UC), 3 Foundational Thrusts (FT), and 2 Cross-Cutting Thrusts (CC). CC1 is designated as a Use-Case Cross-Cutting Thrust, and CC2 is designated as a Foundational Cross-Cutting Thrust.

Thrusts and projects that comprise the AI-SDM research effort include:

AI Deployment Thrusts

Use Case Thrust 1 (UC1): AI for Public Health

- (UC1.1) AI-Driven Interventions for Improving Health Outcomes
- (UC1.2) Equitable Health Resource Allocation
- (UC1.3) Early-Warning Recommendation Systems for Public Health Officials

Use Case Thrust 2 (UC2): AI for Disaster Management

- (UC2.1) Creating Formal Frameworks for Capturing the Resource Allocation Decisions and Impacts of Risk and Cognitive Limitations
- (UC2.2) Ergodic Search with Multiple Drones for Road Passability and Other Response-Critical Information
- (UC2.3) Development of Decision Support for Dynamic Resource Allocation of Disaster Recovery and Response Assets Using Game-Based Simulations

- (UC2.4) Capturing Perception of Risk, Ethics and Accountability to Develop Trust and Risk Communication

AI Development Thrusts

Foundational Thrust 1 (FT1): Computational Representation of Human Decision Processes

- (FT1.1) Empirical and Computational Investigation of Decision Models for Human-AI Decision Making
- (FT1.2) Integrating Individual Cognitive Models of Decision Making and Machine Learning
- (FT1.3) Sociocultural Mediation of Human-AI Decision Making

Foundational Thrust 2 (FT2): Robust Aggregation for Collective Decision Making

- (FT2.1) Learning Social Welfare Functions and Models of Group Deliberation
- (FT2.2) Enhancing Robustness of Sequential Aggregation Mechanisms
- (FT2.3) Resource Constrained Interventions to Achieve Desired Collective Behavior

Foundational Thrust 3 (FT3): Autonomous Decision Support for Dynamic Environments

- (FT3.1) Robust Uncertainty Quantification (UQ) and Task Oriented RL Exploration Algorithms for Sequential Decisions in Use Cases
- (FT3.2) Multi-Agent Reinforcement Learning with Human Feedback
- (FT3.3) Use of Large Language Models (LLMs) in RLPolicies

Cross-Cutting Thrusts

Cross-Cutting Thrust 1 (CC1): Adoption & Ethics

- (CC1.1) Predictive Analysis of AI Adoption for Decision Support
- (CC1.2) Ethical and Societal Ramifications of AI in Our Use Cases

Cross-Cutting Thrust 2 (CC2): Causal & Counterfactual Reasoning

- (CC2.1) Time-Varying and Multi-Scale Causal Inference
- (CC2.2) Nonlinear, High-Dimensional Counterfactual Reasoning
- (CC2.3) Integrating Human and AI Causal Knowledge

A visual representation of the research thrusts, along with the TLs, PLs, and junior researchers involved is shown in [Appendix I](#).

Meta-Projects for Research

To provide a clear understanding of the Institute's integrated research efforts, the AI-SDM Management Team, informed by feedback from the NSF and External Advisory Board, has identified five mission-critical Meta-Projects in Year 2. These projects exemplify cross-organizational and cross-thrust collaboration and have become central themes for the

Institute over the past two years. Moving forward, we anticipate that new research endeavors within AI-SDM will contribute to and support these overarching projects.

- AI-Assisted Resource Allocation for Disaster Management and Public Health
 - Leverages advances in UC1, UC2, FT1, FT2, FT3, CC1, and EWD
- AI-Assisted Behavioral Interventions for Disaster Management and Public Health
 - Leverages advances in UC1, UC2, FT1, FT2, FT3, and CC1
- Framework for AI Adoption
 - Leverages advances in UC1, UC2, FT1, FT2, CC1, and CC2

Strategic Impact

In addition to substantial research efforts, AI-SDM also has goals defined for education, workforce development, broadening participation, and knowledge transfer. Thrusts and projects that define the Institute's Strategic Impact initiatives include:

Education & Workforce Development

- High School Educator Professional Development
- AI User Course for Community Colleges
- Graduate Degrees and Courses

Broadening Participation

- Networking and Professional Development
- AI Pathways for All

Collaboration and Knowledge Transfer

- Collaborations with External Partners
- Upskilling/Workforce Development
- Dissemination of Knowledge to Research Communities
- Outreach and Public Engagement

A visual representation of the Strategic Impact thrusts, along with the TLs and PLs, is shown in [Appendix II](#).

Student Activities

General information

AI-SDM works with students of all levels to encourage collaboration, share knowledge, and facilitate connections across the Institute. Students can be involved in AI-SDM in a variety of ways along with doing traditional research with institute faculty.

Ways to get involved include:

- Attending brainstorming, socials, and networking events
- Participating in professional development opportunities offered by the Institute
- Taking part in the AI-SDM Annual Review and Annual Meeting
- Joining the Student Leadership Council (SLC)
- Providing feedback on past programming or direction for future student-focused events

Student Leadership Council (SLC)

In January 2024, AI-SDM launched the Student Leadership Council (SLC), which consists of Master's and PhD students from across the Institute. These students are featured on a [page](#) on the AI-SDM website that promotes student activities and recruits new students to the Institute.

The SLC provides an opportunity for graduate students in AI-SDM to have a voice in the leadership and direction of the Institute and stay up-to-date on activities and programming. Additional goals for the SLC include:

- Facilitating knowledge exchange among students
- Soliciting students to participate in outreach/broadening participation activities
- Soliciting students to participate in the AI-SDM seminar series and providing input on external speakers to invite
- Input on student-focused programming (professional development, social activities)
- Participation in annual review activities

The SLC typically meets semi-regularly throughout the academic year to plan student activities and provide feedback on events.

Eligibility: Any student who is involved with AI-SDM activities is welcome to apply to be a part of the SLC. A preference is given to students who are funded by the grant and/or are participating in AI-SDM research. If you are interested in being a part of the SLC, please contact Norman Gottron (ngottron@andrw.cmu.edu), Parker Werns (pwerns@andrew.cmu.edu), or any current member of the council. We welcome new students and would love to hear any ideas you have for enhancing the AI-SDM student experience!

Student Brainstorming Sessions

The SLC organizes a ~biweekly hybrid discussion/brainstorming session during the year that reaches beyond the boundaries of the AI-SDM student community to inform multidisciplinary efforts. This programming is an *informal* way for the students to meet each other, exchange knowledge, and strengthen collaboration. The Brainstorming Sessions also act as a low-barrier entry point for new students to learn about and get involved in AI-SDM. The goal of this activity is to connect students to each other without the formality of a research meeting or seminar.

Conversation leaders are typically chosen ahead of time, and students talk about their work and some of the barriers that they encounter while enjoying snacks and refreshments.

Social Events

The SLC coordinates social events throughout the year with students, postdocs, staff, and faculty. These events are open to all students as an additional informal venue to learn about and network across the Institute.

**The schedule for all student events is publicly available on a [shared Google calendar](#).

Annual Review

Our Institute undergoes an annual review to assess our progress, celebrate our achievements, and identify areas for future growth and improvement. Per the terms of our award agreement, the Institute must conduct this Annual Review with the National Science Foundation (NSF) and its partners at the end of each funding year. Successful completion of the Annual Review and approval by NSF are critical, as they gate the release of the next year's funds.

For AI-SDM, our grant year runs from June to May, with the Annual Review typically being held at the end of May. The reviews may be conducted virtually or in-person. Recognizing the importance of student participation, the Institute holds funding centrally at CMU to support student travel to the annual review location when it is held in person.

The review process typically involves a site visit by a team of experts, including government program officers and/or an external review team composed of leaders in relevant fields. This team evaluates our work based on our annual report and their observations during the visit.

As a student within the Institute, you play a significant role in this annual review. Your involvement provides the review team with valuable insights into the Institute's activities and your experiences. Here are the key ways that students and junior researchers contribute to this event:

- **Poster Session:** During a dedicated poster session, you will have the opportunity to present and discuss your research directly with the members of the site visit review team. This is a chance to showcase your contributions and engage in in-depth conversations about your projects. This is also an excellent opportunity to receive feedback on your research from leading experts in the field and to network with potential collaborators. The reviewers often use this session to gain a detailed understanding of specific research projects. We encourage presenters to think about how to clearly and concisely present your research and its place in the broader vision of the Institute.
- **Private Meeting with Students:** The review team will also hold a private meeting with a group of students and postdoctoral researchers. During this session, you will have the opportunity to share your perspectives on the Institute's strengths, weaknesses, and potential opportunities. You may even be asked to prepare brief remarks beforehand,

the content of which should not be shared with senior Institute personnel. This confidentiality ensures that students can provide candid and unbiased feedback to the review team. This direct feedback is highly valuable to the review team. Consider reflecting on your experiences within the Institute – what has been positive, what could be improved, and what exciting opportunities do you see? This is a unique chance to directly influence the future direction of the Institute and have your voice heard.

- **Informal Interactions:** Throughout the first day of the site visit, there are opportunities for informal interactions with the review team members during breakfast and lunch. These moments allow for more casual conversations and relationship building.
- **Demonstrations and Tours:** You **may contribute through demonstrations** of research or tours of key facilities and labs, providing a firsthand look at the Institute's work.

Your active participation in the annual review is crucial for providing a comprehensive picture of our Institute's activities and impact. Your insights and experiences are highly valued by the review team and contribute directly to the evaluation process, which is essential for our continued funding. **We strongly encourage all students to actively participate in the annual review process – your contributions are invaluable!**

Annual Meeting/Retreat

AI-SDM gathers in-person as an Institute once a year for an internal meeting to benchmark accomplishments, plan new projects, and build community. Typically this event is held in late spring or early summer, and all faculty, students, and staff affiliated with the Institute are encouraged to attend and participate. This is an excellent opportunity to network across organizations and build off of connections made in student programming throughout the year. Typically there is both communal programming for faculty and students as well as a separate track for student activities. As with the Annual Review, funds are held centrally to support student travel/lodging for this annual event.

Checklist for Joining AI-SDM

Any new student to AI-SDM should email Parker Werns (pwerns@andrew.cmu.edu) in order to initiate the onboarding process, which consists of:

1. Receiving the AI-SDM Student Onboarding Handbook (this document)
2. Being added to the AI-SDM Slack Workspace and the students-and-postdocs channel
3. Being added to the AI-SDM Google Drive folder, "Students"
4. Being added to the ai-sdm-seminar@cs.cmu.edu and ai-sdm-students@cs.cmu.edu mailing lists
5. Being added to the AI-SDM personnel tracking sheet

New students can then take the following actions:

1. Introduce yourself on the #students-and-postdocs Slack channel

2. Add the [AI-SDM Student Calendar](#) to your Google account
 - a. Start attending seminars, social events, brainstorming sessions, etc
3. Explore the [Student Onboarding Folder](#) on the Google Drive
 - a. Contains the Strategic & Implementation Plan, Research Project Matrix, and Annual Report
4. Reach out to students in your thrust or in a thrust that you're interested in - see Resources for Students, below
5. Take advantage of the Resources for Students below
6. Contact AI-SDM staff if you'd like to join the SLC

Resources for Students

High Performance Computing (HPC)

The Institute has purchased HPC resources that are available to faculty, students, postdocs, and staff who are working on AI-SDM projects. The Institute purchased one GPU server with 8x L40S GPUs along with a storage server with 320TB SAS storage. This node is part of a shared cluster within the Machine Learning Department at CMU with additional GPUs, and it is easily accessible by users who are inside and outside of the university. Each user will start with a 100GB home directory and 1TB of user data. This can be expanded as needed. Shared directories can be configured, as well. This arrangement offers AI-SDM a cost-effective solution for access to a growing shared cluster as well as built-in access to flex capacity during off-peak times.

Instructions for Accessing the Cluster:

- **CMU faculty, students, and staff:** Please reach out to Parker Werns (pwerns@andrew.cmu.edu) and provide your AndrewID, and he will get you added to the list. Once added, you will receive instructions from the HPC Systems Administrator about gaining access.
- **Non-CMU faculty, students, and staff:** You will first need to send Parker (pwerns@andrew.cmu.edu) information so that he can set up an AndrewID for you. The information needed is:
 - Legal First Name
 - Legal Last Name
 - Home Address (street, city, state, zip)
 - Phone
 - Non-CMU email address
 - If applicable, your previous AndrewID (if you were previously associated with the university as a student, faculty member, or staff member)

Once your Andrew ID is created, you will be able to log into CMU systems. Then, you'll be added to the HPC system, and you will receive instructions from the HPC Systems Administrator about gaining access.

There is a Slack group and wiki for the cluster where members can post/respond to queries and tips. Users have access to both once they are added.

AI Gateway and API Access

The AI Gateway is a centralized, CMU-supported service, built using LiteLLM. This tool provides developers with streamlined access to multiple AI models using a consistent, OpenAI-compatible API. It enables experimentation and production use of large language models (LLMs) through a unified interface that simplifies model selection, team management, and budget tracking. The Institute has an account that allows users to access single API keys for multiple top-tier AI models on an as-needed basis under one consolidated account.

Instructions for Accessing AI Gateway:

- **CMU faculty, students, and staff:** Please reach out to Parker Werns (pwerns@andrew.cmu.edu) and provide your AndrewID. Once added, you will receive log-in instructions from the AI Gateway team.
- **Non-CMU faculty, students, and staff:** You will first need to send Parker (pwerns@andrew.cmu.edu) information so that he can set up an AndrewID for you. The information needed is:
 - Legal First Name
 - Legal Last Name
 - Home Address (street, city, state, zip)
 - Phone
 - Non-CMU email address
 - If applicable, your previous AndrewID (if you were previously associated with the university as a student, faculty member, or staff member)

Once your Andrew ID is created, you will be able to log into CMU systems. Then, you will receive log-in instructions from the AI Gateway team.

CMU Library Access

The institute is able to sponsor accounts at the CMU library, allowing users to access all databases, eResources, tools, and journals as if they were on campus. A list of these resources can be found here: <https://guides.library.cmu.edu/az/databases>.

This account will be linked to your AndrewID. If you do not have an AndrewID, you will first need to send Parker (pwerns@andrew.cmu.edu) information so that he can set one up for you. The information needed is:

- Legal First Name
- Legal Last Name
- Home Address (street, city, state, zip)
- Phone
- Non-CMU email address
- If applicable, your previous AndrewID (if you were previously associated with the university as a student, faculty member, or staff member)

Once your Andrew ID is created, you will be able to log into CMU systems. Then, Parker will forward the confirmation of your account and its sponsorship through AI-SDM to complete your library access.

Access to AI-SDM Collaborative Space at CMU

The Institute's home is located in a newly renovated, centrally located section of the first floor of Wean Hall on CMU's campus. This space includes an office for the Managing Director (WEH 1321), shared office space (WEH 1323), a communal lounge and kitchenette area (WEH 1325), and a large conference room for group meetings, visitor meetings, and student activities (WEH 1327). **All students involved in AI-SDM are welcome to use this space. The conference room can also be reserved by AI-SDM students for meetings and activities.**

To get access to the AI-SDM Collaborative Space, or to reserve the space for a meeting, please email Jami Teets at jteets@andrew.cmu.edu.

To see if WEH 1327 is available, please use the calendar linked below:

https://calendar.google.com/calendar/embed?src=c_28b3cb07b9b3bf526159173c10d45d448414bcbe593ac77eda867c290f318838%40group.calendar.google.com&ctz=America%2FNew_York



Figure 2. Renovated AI-SDM space on the 1st floor of Wean Hall

Website, Social Media, and Podcast

Website: <https://www.cmu.edu/ai-sdm/>

The website is a one-stop shop for all things AI-SDM. Be sure to check out the [page for students](#) and the [Resources section](#).

LinkedIn: <https://www.linkedin.com/company/ai-sdm/>

LinkedIn is the primary social media platform used by AI-SDM. Please click the link above and follow the Institute!

YouTube: <https://www.youtube.com/@ai-sdm>

All seminars are available on the AI-SDM YouTube channel, as well as other talks and promotional videos for the Institute. Click [here](#) to subscribe!

AI IRL Podcast: <https://www.cmu.edu/ai-sdm/podcast/index.html>

AI IRL: Real Talk with Real Experts is a public-facing podcast run by undergraduate and high school students. The target audience for the podcast is the general public and students who are curious about the impact of AI in society. The episodes are distributed on the Institute's [YouTube channel](#) as well as other readily-consumable platforms ([Apple](#), [Spotify](#), and [YouTube Music](#)).

Contact Information and Email Distribution Lists

Norman Gottron (Managing Director): ngottron@andrew.cmu.edu

Parker Werns (Project Coordinator): pwerns@andrew.cmu.edu

Jami Teets (Administrative Assistant): jteets@andrew.cmu.edu

Email List for AI-SDM Students and Postdocs: ai-sdm-students@cs.cmu.edu

Email List for AI-SDM Seminars and General Announcements: ai-sdm-seminar@cs.cmu.edu

AI Virtual Organization (AIVO)

Leading agencies NSF and USDA-NIFA, together with other partners, have funded 27 AI institutes, via the AI Institutes program. [AIVO](#) is an organization that ties together the Institutes in a “network of networks” for their mutual benefit. Among the opportunities made available by the organization is the annual Summit for AI Institute Leadership (SAIL), which brings together faculty and staff from [all 27 Institutes](#) for talks, panels, workshops, and networking. There are also opportunities for student scholarships to attend the conference. AIVO also facilitates a number of Special Interest Groups (SIGs) across the Institutes that meet regularly.

AIVO also occasionally makes funds available to support Workshops, SIGs, and conference attendance for personnel who are a part of the AI Institutes. The Travel Grants program has been available in FY 23 and FY24 to support student travel to conferences. As funding becomes available to AI-SDM through these and other programs, they will be communicated to the applicable Institute listservs by the Managing Director. To learn more, please contact Norman Gottron (ngottron@andrew.cmu.edu).

Student Points of Contact

Students and postdocs who are new to AI-SDM often want to learn more about current projects once they have been introduced to the Institute. Junior researchers are encouraged to network across the Institute and seek out new collaborations. To facilitate these interactions, it can be helpful to reach out to student contacts within each area and organization. Thus, we have compiled a list of student points of contact for each thrust and institution, below.

Thrust Contacts:

- **(UC1) Public Health:** Santiago Cortes Gomez (PhD student of Bryan Wilder), scortesg@andrew.cmu.edu
- **(UC2) Disaster Management:** Tom Manzini (PhD student of Robin Murphy), tom.m@nzini.com
- **(CC1) Adoption/Ethics:** Elinor Yeo (research staff member), eyeo@mitre.org
- **(FT1) Human Decision-Making:** Chase McDonald (PhD student of Coty Gonzalez), chasemcd@andrew.cmu.edu
- **(FT2) Collective Decision-Making:** Kanad Pardeshi (PhD student of Aarti Singh), kpardesh@andrew.cmu.edu
- **(FT3) Autonomous Decision-Making:** Grace Liu (PhD student of Aarti Singh and Jeff Schneider), gliu2@andrew.cmu.edu

- **(CC2) Causal/Counterfactual Reasoning:** Ignavier Ng (PhD student of Kun Zhang and Peter Spirtes), ignavierng@cmu.edu
- **Strategic Impact (Education/Outreach/Workforce Development/Broadening Participation/Collaborations):** Norman Gottron (CMU), ngottron@andrew.cmu.edu

University/Organization Contacts:

- **Boston Children’s Hospital:** Swati Rajwal (PhD student mentored by Maimuna Majumder), swati.rajwal@emory.edu
- **Carnegie Mellon University:** Jianyu Xu (postdoctorate in Machine Learning) jjianyux@andrew.cmu.edu, Kanad Pardeshi (PhD student in Machine Learning), kpardesh@andrew.cmu.edu
- **Harvard University:** Paula Rodriguez Diaz (PhD student of David Alvarez-Melis), Paula prodriguezdiaz@g.harvard.edu
- **Howard University:** Melanece Wesley (PhD student of Terri Adams Fuller), melanece.wesley@bison.howard.edu
- **MITRE Corporation:** Elinor Yeo (research staff member), eyeo@mitre.org
- **Navajo Technical University:** Dr. Md Mahbubar Rahman (Assistant Professor), md.rahman@navajotech.edu and Cajaun Cleveland (Undergraduate student in Diné Studies), cajaun.cleveland@student.navajotech.edu
- **Texas A&M University:** Tom Manzini (PhD student of Robin Murphy), tom.m@nzini.com
- **Penn State University:** Meera Ray (PhD student of Christopher Dancy), mfr5832@psu.edu
- **University of Washington:** Currently open!
- **Florida State University:** David Merrick (Director of Center for Disaster Risk Policy), dmerrick@em.fsu.edu

Important Documents

The documents below can be found in the Student Onboarding folder on the Google Drive: https://drive.google.com/open?id=1YJClkj7X6VEm5whW2FxmV_OJ6gWUDv4b&usp=drive_fs

Strategic & Implementation Plan (SIP)

The SIP includes statements about the vision, mission, organizational structure, and management and performance goals and indicators of success. It also includes completion timelines, milestones, and deliverables for the 60-month award period. The SIP is a “roadmap” for success for the Institute and is updated annually.

Annual Report

The Annual Report is the principal means for the Institute to demonstrate performance prior to the conduct of the Annual Review. It communicates the vision, plans, activities, achievements, and potential impacts in all aspects of Institute operations. The Annual Report presents a unified picture of activities (research, education and workforce development, efforts for broadening participation, collaborations and partnerships, and technology translation activities) as well as provides details about individual research projects and how they fit into the Institute's vision.

Appendix I: Research Thrust Personnel Matrix

Thrust	Use Case											
	Public Health (UC1)			Disaster Management (UC2)				Adoption & Ethics (CC1)				
	Majumder (BCH) Chapman (CMU)			Murphy (TAMU) Adams-Fuller (Howard)				Lehner (MITRE) Heidari (CMU)				
Project	(UC1.1) AI-Driven Interventions for Improving Maternal Health Outcomes	(UC1.2) Equitable Health Resource Allocation	(UC1.3) Early-Warning Recommendation Systems for Public Health Officials	(UC2.1) Creating Formal Frameworks for Capturing the Resource Allocation Decisions and Impacts of Risk and Cognitive Limitations	(UC2.2) Ergodic Search with Multiple Drones for Road Passability and Other Response-Critical Information	(UC2.3) Development of Decision Support for Dynamic Resource Allocation of Disaster Recovery and Response Assets Using Game-Based Simulations	(UC2.4) Capturing Perception of Risk, Ethics, and Accountability to Develop Trust and Risk Communication	(CC1.1) Predictive Analysis of AI Adoption for Decision Support	(CC1.2) Ethical and Societal Ramifications of AI in Our Use Cases			
Project Leader(s)	Tambe (Harvard) Chapman (CMU) Wildner (CMU)	Majumder (BCH)	Golden (Harvard)	Murphy (TAMU)	Choset (CMU)	Singh (CMU)	Adams-Fuller (Howard)	Lehner (MITRE)	Heidari (CMU)			
Supporting Investigators	Chapman (CMU) Wildner (CMU)	Singh (CMU) Zhang (CMU) Spirites (CMU)	Tambe (Harvard) Singh (CMU)	Adams-Fuller (Howard)	Murphy (TAMU)	Gonzalez (CMU) Murphy (TAMU) Dancy (Penn State)	Lehner (MITRE) Murphy (TAMU)	Eris (MITRE) Heidari (CMU)	Dancy (PSU) Kun Zhang (CMU)			
Students/Postdocs/Staff	Santiago Cortes Gomez (Wildner) Dhwani Yagnaraman (Chapman) Yunfan Zhao-PostDoc (Tambe) Paula Rodriguez Diaz (Tambe) Guojun Xiong (Tambe)	Nikhil Vytla (Majumder) Erin Frame (Majumder) Marie Charpignon (Majumder) Alison Ezeonwu (Majumder) Alexis Wright (Majumder)	Marissa Childs (postdoc) Dirneji Mudele (postdoc) Rong Zheng (Singh)	Tom Menzini (Murphy) Priya Perali (Murphy)	Ananya Rao (Choset) Tom Menzini (Murphy) Priya Perali (Murphy)	Roderick Seow-PostDoc (Gonzalez) Ayush Tanwar (Dancy)	Melance Wesley (Howard) Asha Smith (Howard) Mikah Jones (Howard) Kemet Azubuike (Howard)	Elinor Yeo (MITRE) Rebecca Yu (CMU)	Nari Johnson (CMU) Niloofer Nikoofar (CMU)			
Thrust	Foundational											
	Human Decision Making (FT1)			Collective Decision Making (FT2)			Autonomous Decision Making (FT3)			Causal & Counterfactual Reasoning (CC2)		
	Gonzalez (CMU) Dancy (PSU)			Ramdas (CMU) Procaccia (Harvard)			Schneider (CMU) Kakade (Harvard)			Zhang (CMU) Spirites (CMU)		
Project	(FT1.1) Empirical and Computational Investigation of Decision Models for Human-AI Decision Making	(FT1.2) Integrating Cognitive and Machine AI Models of Decision Making	(FT1.3) Sociocultural Mediation of Human-AI Decision Making	(FT2.1) Learning Social Welfare Functions and Models of Group Deliberation	(FT2.2) Enhancing Robustness of Sequential Aggregation Mechanisms	(FT2.3) Resource Constrained Interventions To Achieve Desired Collective Behavior	(FT3.1) Robust Uncertainty Quantification (UQ) and Task Oriented RL Exploration Algorithms for Sequential Decisions	(FT3.2) Multi-Agent Reinforcement Learning with Human Feedback	(FT3.3) Use of Large Language Models (LLMs) in RL Policies	(CC2.1) Time-Varying and Multi-Scale Causal Inference	(CC2.2) Nonlinear, High-Dimensional Counterfactual Reasoning with Guarantees	(CC2.3) Integrating Human and AI Causal Knowledge
Project Leader	Gonzalez (CMU)	Gonzalez (CMU)	Dancy (PSU)	Procaccia (Harvard)	Ramdas (CMU)	Wildner (CMU)	Schneider (CMU)	Du (UW)	Kakade (Harvard)	Zhang (CMU)	Zhang (CMU)	Spirites (CMU)
Supporting Investigators	Dancy (PSU) Adams-Fuller (Howard) Heidari (CMU) Majumder (BCH)	Tambe (Harvard)	Gonzalez (CMU)	Singh (CMU)	Procaccia (Harvard) Singh (CMU)	Singh (CMU) Milind Tambe (Harvard)	Ramdas (CMU) Du (UW)	Kakade (Harvard)	Schneider (CMU)	Spirites (CMU)	Spirites (CMU) Lehner (MITRE)	Gonzalez (CMU) Zhang (CMU)
Students/Postdocs/Staff	Roderick Seow-PostDoc (Gonzalez) Chase McDonald (1/2) (Gonzalez) Meera Ray (Dancy) Ayush Tanwar (Dancy)	Roderick Seow-PostDoc (Tambe) Yunfan Zhao-PostDoc (Tambe)	Meera Ray (Dancy) Ayush Tanwar (Dancy) Sharon Liu (Dancy) Emmanuel Domfeh (Dancy) Roderick Seow-PostDoc (Gonzalez)	Kanad Pardeshi (Singh) Jennifer Hsia (Singh) Itai Shapira (Procaccia) Samsara Foubert (Heidari)	Ben Chugg (Ramdas) James Leiner (Ramdas) Itai Shapira (Procaccia) Tao Lin (Procaccia)	Santiago Cortes Gomez (Wildner)	Youngseog Chung (Schneider) Qiwen Cui (Du)	Kakade (Harvard)	Hanlin Zhang (Kakade) Ben Edelman (Kakade)	Yewen Fan (Zhang) Namrata Deka (Zhang) Xinshuai Dong (Zhang) Yujia Zheng (Zhang) Yujia Zheng (Zhang) Ignavier Ng (Zhang/Spirites) Xiangchen Song (Zhang)	Yewen Fang (Zhang) Namrata Deka (Zhang) Xinshuai Dong (Zhang) Yujia Zheng (Zhang) Ignavier Ng (Zhang/Spirites) Shaocan Xie (Zhang) Lingjing Kong (Zhang)	Yujia Zheng (Zhang) Ignavier Ng (Zhang/Spirites) Rebecca Han (Zhang/Spirites)

Appendix II: Strategic Impact Personnel Matrix

Thrust	Strategic Impacts							
Effort Leader	<i>Nugent (CMU)</i>							
Thrust	Education and Workforce Development			Broadening Participation		Collaboration and Knowledge Transfer		
Thrust Leader	<i>Nugent (CMU)</i>			<i>Hollar (Harvard) Ramoni (NTU)</i>		<i>Murphy (TAMU) Tambe (Harvard)</i>		
Project	High School Educator Workshop	Community College and Educational Partners	Graduate Degrees and Courses	Leadership Training	AI Pathways for All	Collaborations with External Partners	Up-Skilling/Workforce Development	Outreach to Research Community and Public
Project Leader	<i>Naragon (Winchester Thurst) Nassar (Winchester Thurst)</i>	<i>Sakr (CMU)</i>	<i>Chapman (CMU)</i>	<i>Hollar (Harvard) Rahman (NTU)</i>	<i>Hollar (Harvard)</i>	<i>Singh (CMU) Gottron (CMU)</i>	<i>Nugent (CMU) Ammirati (CMU)</i>	<i>Gottron (CMU)</i>
Supporting Investigators	<i>Gottron (CMU) Hollar (Harvard) Ramoni (NTU)</i>	<i>Burte (CMU) & Sail team</i>	<i>Rosenfeld (CMU) Singh (CMU) Adams-Fuller (Howard)</i>	<i>Nugent Singh Heidari Majumder Adams-Fuller Ramoni Dancy (PSU) Gottron</i>	<i>Hollar (Harvard) Ramoni (NTU) Romine (NTU) Gottron (CMU) Dancy (PSU) Griggs (PSU)</i>	<i>Murphy (TAMU) Tambe (Harvard)</i>	<i>Murphy (TAMU)</i>	<i>Singh (CMU)</i>

Revision History

Date	Revision	Notes	Edited By
6/28/24	0	Document origination	N. Gottron / P. Werns
7/17/24	A	Incorporating feedback from SLC	N. Gottron
4/17/25	B	Updating for Year 2 (added new Institutes, FSU, meta-project descriptions, updates to space, staff, updated POCs)	P. Werns / N. Gottron
12/19/25	C	Updating for Year 3 (add new resources)	P. Werns / N. Gottron