We are pleased to submit this report on the Southern California Healthcare Delivery Science Center (“Center”). Included in this report are a description of the Center’s personnel and partners, accomplishments from our first year, future plans, and updates from past pilot awardees whose research helped lay the foundation for an impactful Center.

The Center was created in July 2021 with financial support from the Keck School of Medicine of USC and the Southern California Clinical and Translational Science Institute, in addition to in-kind support from the Los Angeles County Department of Health Services (LAC DHS). We achieve our mission by using innovative solutions to transform healthcare delivery and by leveraging academic-public sector partnerships.

**Mission**
To enhance healthcare access, quality of care, and health outcomes to achieve health equity.

**CENTER OBJECTIVES**

1. **Innovation**
   Assemble and support teams to develop, demonstrate and disseminate innovative interventions for safety-net health systems.

2. **Education**
   Develop a skilled workforce in the multidisciplinary field of healthcare delivery science, especially those who are underrepresented in medicine.

3. **Equity**
   Advance the science of healthcare delivery science to tackle health equity challenges.

Contact us: hds@usc.edu
Directors

Founding Director

Amytis Towfighi, MD

Founding Director Amytis Towfighi, MD, is Professor of Neurology and Population and Public Health Sciences (Clinical Scholar) at Keck School of Medicine of USC; Director of Neurological Services for LAC DHS, and Associate Medical Director of Research and Chief of Neurology at LAC+USC Medical Center. She has led randomized trials focusing on team-based cardiovascular prevention interventions bridging healthcare systems with communities and addressing social determinants of health to tackle inequities. Her contributions to the field have been recognized through awards and leadership positions by the American Heart Association, American Academy of Neurology, and National Institute of Neurologic Disorders and Stroke, among others. Her roles and experience at USC and LAC DHS have positioned her well to establish the Center as a valuable resource for research, training, and services in healthcare delivery science.

Managing Director

Allison Orechwa, PhD, MBA

The Center was also supported during the first year by Managing Director Allison Orechwa, PhD, MBA. Working closely with Dr. Towfighi since 2017, Allison co-led the development of the educational offerings, funding opportunities, and a national collaboration on public-academic partnerships for health. She will continue to manage Center operations, with an emphasis on establishing new partnerships and supporting disruptive innovations in healthcare delivery. She also serves as Senior Director of Strategy and Innovation for the Southern California Clinical and Translational Science Institute (SC CTSI), where she leads interdisciplinary projects to improve research.
Progress to Date

We have made great strides in establishing the Center’s infrastructure and operations since launch. Accomplishments include creating an advisory board and mentor pool, hiring two experienced staff members, developing new courses, and initiating grants and resources. Highlights are presented below.

Hired Personnel

We expanded the Center’s capacity by hiring two administrative staff members.

Minyan Watson-Faulkner, MPH

As Program Specialist, Ms. Watson-Faulkner performs administrative duties for the Center, primarily in the areas of educational offerings and patient and family engagement. She also serves as Program Specialist for the SC CTSI, where she manages program operations for the Biostatistics, Epidemiology and Research Design core and project manages institute-wide initiatives. She brings extensive expertise in public health, research, and community engagement.

Lisa Thai, MPH

As Program Administrator, Lisa helps initiate, implement, pilot and assess new Center efforts focused on grants management, marketing, and our annual symposium. In close collaboration with Center staff, USC researchers, and MPH student interns, Ms. Thai facilitates ongoing operations of the Center. Ms. Thai also serves as Administrator for multiple LAC+USC departments. She brings extensive expertise in fundraising, public health, and health systems operations.
Our first Advisory Board meeting was held on December 14, 2021. Drs. Towfighi and Orechwa presented the Center’s mission, objectives, current activities, and short-term goals. A few key themes emerged from the discussion that followed:

Many related programs exist at USC that could be good resources or sources of collaboration: the Gehr Center, joint Masters programs in Addiction Science and Healthcare Computer Science, Keck Medical School’s Health Justice and Systems of Care core curriculum, the USC Center for AI and Society, and Biomedical Engineering hackathons/incubator sessions. The Center can also look to programs outside of USC for inspiration, such as the Camden Coalition, CalAIM, the Right Care Initiative, the PATH public health organization, and the Commonwealth Report, which concludes that poor disease prevention is what sets the U.S. apart from healthier countries. Other notable discussion points included:

The Center should “do blue-sky thinking” to cultivate transformative innovations in healthcare; high-impact, high-value projects should be prioritized for support by the Center; the role of health system leadership should be studied; larger community-level partnerships should be explored; and the Center should create a conceptual model describing Healthcare Delivery Science, its inputs, and its interactions within a complex ecosystem.

Our second Advisory Board meeting is scheduled for Monday, January 9th, 2023.
We are fortunate that over 20 experts have agreed to serve as mentors for Healthcare Delivery Science projects. Research mentors come from five different schools at USC. LAC DHS mentors are senior operational leaders from many corners of the healthcare system. Mentors are open to meeting with investigators with ideas for disruptive innovation and providing expert guidance and support.

**DHS Mentors**

- **Hal Yee, MD, PhD**
  - Chief Medical Officer and Chief Deputy Director, Clinical Affairs, LAC DHS

- **Paul Giboney, MD**
  - Associate Chief Medical Officer, LAC DHS

- **Evan Raff, MD**
  - Director, Specialty Care, LAC DHS

- **Lauren Daskivich, MD**
  - Director, Eye Health, LAC DHS

- **Erin Saleeby, MD**
  - Director, Women’s Health, LAC DHS

- **Amy Towfighi, MD**
  - Director, Neurological Services, LAC DHS

- **Anshu Abhat, MD**
  - Director, Care Transitions, LAC DHS

- **Allison Luu, MD**
  - Patient Safety Officer, LAC+USC Medical Center

- **Brad Spellberg, MD**
  - Chief Medical Officer, LAC+USC Medical Center

- **Anish Mahajan, MD**
  - Chief Medical Officer, Harbor-UCLA Medical Center

- **Phillip Gruber, MD**
  - Interim Chief Medical Information Officer, LAC-DHS

- **Chase Coffey, MD**
  - Associate Chief Medical Officer and Chief Quality Officer, LAC+USC Medical Center
Research Mentors

Sonali Saluja, MD  
Director, The Gehr Family Center for Health Systems Science and Innovation, USC

Steven Chen, PharmD, FASHP, FCSHP, FNAP  
Professor of Clinical Pharmacy, USC

Albert Farias, PhD, MPH  
Assistant Professor of Population and Public Health Sciences, USC

Daniella Meeker, PhD  
Associate Professor of Population and Public Health Sciences, USC

Barbara Turner, MD, MSED, MACP  
Professor of Clinical Medicine, USC

Jason Doctor, PhD  
Professor of Public Policy, USC

Shinyi Wu, PhD  
Associate Professor of Social Work and Industrial & Systems Engineering, USC

Alejandra Casillas, MD, MS  
Assistant Professor of Medicine, UCLA

Jennifer Tsui, PhD  
Associate Professor of Population and Public Health Sciences, USC

Brian Mittman, PhD  
Senior Scientist, Division of Health Services Research and Implementation Science, Kaiser
Hosted Seminars

In collaboration with the Gehr Family Center for Health Systems Science and Innovation, we began hosting quarterly virtual seminars on Healthcare Delivery Science. The seminar is open to all faculty, staff, and students with interests in health system innovation, as well as scholars outside of USC. Our first year of seminars focused on presentations by past awardees and highlighted resources related to research with LAC DHS. Recordings are posted on our website for enduring access.

March 14, 2022

Practice-Based Evidence for Lifestyle Redesign
Occupational Therapy in Primary Care
Beth Pyatak PhD, OTR/L, CDCES, FAOTA, Associate Professor & Director, Lifestyle Redesign for Chronic Conditions and Stacey Schepens Niemiec, PhD, OTR/L, Associate Professor of Research, Herman Ostrow School of Dentistry of USC

June 13, 2022

Implementation of an Outpatient Procedure Service to Decrease Emergency Department Utilization
Shadi Dowlatshahi, MD, MSc, Hospitalist, Internal Medicine, Director, Procedure Services, LAC+USC Medical Center, Adjunct Clinical Assistant Professor of Medicine, and Barbara Turner, MD, MSED, MACP, Senior Advisor, USC Gehr Family Center for Health Systems Science and Innovation, Clinical Professor of Medicine, Keck School of Medicine of USC

September 12, 2022

Development of a county-wide “Hot Foot Line” to eliminate preventable amputation in people with diabetes
David G. Armstrong, DPM, MD, PhD, Professor of Surgery and Director, Southwestern Academic Limb Salvage Alliance (SALSA), Keck School of Medicine of USC

December 12, 2022

Research Informatics at DHS: An Overview of Data & Tools
Daniella Garofalo, MPA, Program Manager, and Camilla Catignas, MPH, Program Specialist, SC CTSI Clinical Research Informatics
Launched Website & Brand

The Center’s website (https://sites.usc.edu/hdscenter) launched in November 2022. It includes:

• Grant funding opportunities and resources
• Updates on current and past research grants
• Educational and networking opportunities
• Guidance on partnering with LAC-DHS

Our website helps connect healthcare professionals with CTSI core groups, LAC DHS, and others.

We have also launched social media pages through Facebook and Twitter to promote and share upcoming events.

Twitter: @hds_center
https://www.facebook.com/hdscenter

Launched Seed Funding

The Center is proud to offer competitive seed grants for 1-2 year projects for up to $30,000 each. We announced the new opportunity in November 2022 via a solicitation for letters of intent, which we will accept on a rolling basis. We expect to award up to 5 grants per year to catalyze new projects or supplement existing projects related to healthcare delivery innovations that are feasible, sustainable, and responsive to DHS priorities.

Current DHS priorities are stated in the solicitation:

• **Access to care**
  • Inpatient flow
  • Outpatient access (primary, specialty care)
  • Transitions in care
  • Emergency Department cycle time
• **Reduce unnecessary and potentially harmful diagnostic studies and treatment**
• **Publicly reported metrics**
  • QIP and Leapfrog

Offered Consultation Services

Researchers interested in conducting Healthcare Delivery Science research are welcome to request consultations on topics such as:

• How to engage operational leaders at Los Angeles County Department of Health Services in research design and implementation
• The process for conducting research with the county
• Training and career development in Healthcare Delivery Science

Dr. Towfighi has provided 67 expert consultations since launch.
Healthcare Delivery Science Courses

With the SC CTSI, we developed a series of online courses covering the multifaceted field of healthcare delivery science. Content was guided by published competencies for Learning Health Systems and by best instructional practices. Each course contains up to eight hours of asynchronous content, as well as quizzes for knowledge checks. Currently, the courses are freely available through Canvas to clinicians, researchers, health system administrators, research staff, and students from any institution. Once all courses are complete, we will offer a certificate of completion.

Overview of Healthcare Delivery Science

The study of systems, processes, leadership, and management to optimize healthcare delivery & the health of patients.

Amytis Towfighi, MD, HDS Center Director, USC

Dissemination & Implementation Science

The intersection of implementation research - the systematic study of how a set of activities and strategies can successfully integrate an evidence-based health intervention in specific settings - and dissemination research - the systematic study of factors that promote successful adoption of an evidence-based intervention by specific stakeholders as well as the larger community, resulting in widespread adoption.

Barbara Turner, MD, MSED, MACP, Professor of Clinical Medicine, USC
Albert Farias, PhD, MPH, Assistant Professor of Population and Public Health Sciences, USC

Lectures:

- Introduction to Dissemination and Implementation Science
- Healthcare Stakeholders: Partners in Implementation Research
- Implementation Science: An Overview of Theories, Models, and Frameworks
- Evaluating the Evidence Base and Implementation Strategies
- Implementation Science Methods and Evaluation
- Methods for Dissemination: Diverse Approaches and Opportunities
**Behavioral Economics**

Combines the economics of incentives with psychology’s insights about how people behave under real-world circumstances.

Jason Doctor, PhD, The Norman Topping National Medical Enterprise Chair in Medicine and Public Policy and Professor of Public Policy, USC

Lectures:
- Preference, Probability, Utility
- Utility Elicitation
- Supply and Demand
- Demand Shifts in Medical Services
- Biases & Heuristics
- Prospect Theory

**Quality Improvement**

A framework used by healthcare organizations to systematically improve care. It involves systems thinking, measurement, and analysis to increase quality while reducing costs.

Robert Lloyd, PhD, Director of Performance Improvement for the Institute for Healthcare Improvement

Lectures:
- Deming’s System of Profound Knowledge
- Model for Improvement
- PDSA Cycles
- Run Charts
- Driver Diagrams
- Static Vs. Dynamic Data
- Flowcharts
- Control Charts
- Family Measures
- Cause and Effect Diagrams
- Divergent and Convergent Thinking
- Force Field Analysis
- Pareto Analysis

**Leadership & Management**

Introduces the principles and methods of effective leadership in the highly complex industry of healthcare, as well as the leadership and management techniques required to support multidisciplinary teams in improving patient outcomes.

David Logan, PhD, Lecturer in Management and Organization, USC; Co-Founder and Senior Partner, Care 4th & Ashleigh Rodriguez, MSN, MMM, Co-Founder and Senior Partner, Care 4th

Lectures:
- Principles of Leadership
- Leading the Future of Healthcare
- Organizational Leadership
- Leading High-Performance Teams
- Intercultural Awareness
- Leading With Ethics
Health Systems Engineering

A discipline that consists of the scientific study and application of systems engineering methods to improve the value of healthcare delivery.

Shinyi Wu, PhD, Associate Professor of Social Work and Industrial and Systems Engineering, USC

Lectures:
- Introduction to Health Systems Engineering
- Fundamental processes of systems engineering
- DMAIC: data-driven improvement
- Lean Six Sigma
- Human factors engineering and patient safety
- Quality improvement
- Health analytics

Stakeholder Engagement

The practice of building sustainable and bidirectional partnerships with stakeholders in the healthcare delivery ecosystem, including patients, providers, and researchers.

Jennifer Tsui, PhD, Associate Professor of Population and Public Health Sciences, USC

Lectures:
- Multi-stakeholder engagement in community, public health, and health care settings
- Organizational and Participatory Processes in Learning Health Systems Research
- Adaptation and Dissemination and Implementation in Populations with Health Disparities and Low Resource Settings

Informatics

The integration of healthcare sciences, computer science, information science, and cognitive science to assist in the management of healthcare information.

Daniella Meeker, PhD, Associate Professor of Population and Public Health Sciences, USC

Lecture:
- A Brief Overview of Informatics for Learning Health Systems
Team Science

A collaborative effort to address a scientific challenge that leverages the strengths and expertise of professionals trained in different fields

Jennifer Cross, PhD, Director, Institute for Research in the Social Sciences, Colorado State University

Lectures:

- Introduction to Team Science
- Cultivating Genuine Relationships
- Team Communication
- Collaborative Thinking, Problem Solving, and Creativity
- Team Management
- Team Leadership

Research Methods for Healthcare Delivery Science

Fundamental principles of study design and analysis for healthcare delivery science projects. Examples and step-by-step guidance support grant proposal development.

Amytis Towfighi, MD, HDS Center Director, USC
Wendy J. Mack, PhD, Professor of Population and Public Health Sciences, USC
Rachel R. Ceasar, PhD, Assistant Professor of Population and Public Health Sciences, USC

Lectures:

- Study Design, Research Question & Specific Aims
- Data Analysis Plan
- Qualitative and Mixed Methods

Future Courses

Additional courses are in development with experts in:

- Health Equity
- Health Policy
- Innovation
Engaged with Patients

At the Center, we strive to ensure that patients are engaged throughout the research process, by identifying priorities, co-designing and implementing interventions, and aiding in dissemination. We have taken a multipronged strategy for engaging patients and their families. First, we have invited patients and their families to serve on an advisory committee to the Center. Second, we have attended Patient and Family Advisory Council meetings at LAC+USC, Harbor-UCLA, and Rancho Los Amigos National Rehabilitation Center. Finally, patients, caregivers, and family members are invited to serve on Community Advisory Boards for funded research, attend our national symposium, and provide ideas for future research.

Led a National Forum

Dr. Towfighi chairs a national discussion forum called “CTSA Partnerships with Public Departments of Health and Healthcare.” The forum holds monthly meetings with 16 universities with similar partnerships with city, county, and state health departments. Presentations have included:

- Health Information in the Public Square (University of Kansas)
- Using Science and Evidence to Improve Wellbeing (WISE Indiana State University Partnership)
- VaccinateLA (USC)

A paper is in development on how partnerships were affected by the COVID-19 pandemic.

Planning Annual Symposium

The Center will host our first annual Healthcare Delivery Science: Innovation and Partnerships for Health Equity Research (DESCIPHER) Symposium in June 2023 at the California Endowment conference center in downtown Los Angeles. The symposium will feature live panel discussions, keynote addresses and networking and research opportunities. The symposium will bring together leading healthcare executives, physicians, researchers, patient groups, academics, and clinical trial professionals in a collaborative forum to discuss health equity research.
Awarded Grants

In collaboration with SC CTSI and DHS, the Center is supporting two $150k Safety Net Innovation Awards in 2022. Selected from a competitive pool of applications from many USC departments, these grants support implementation, evaluation and dissemination over two years. The award program includes mentorship from research and operational mentors, support in study conduct and project management, and required training in our HDS courses.

Benjamin Xu, M.D., Ph.D., Department of Ophthalmology
Keck School of Medicine of USC

Urgent glaucoma vs. routine glaucoma vs. glaucoma suspect vs. non-glaucoma

The primary goal of this project is to shift current practice paradigms and establish the effectiveness of an AI-assisted intervention for delivering precision screening and care to LAC DHS patients with or at risk for glaucoma. This intervention will alleviate the burden of glaucoma on the LAC DHS healthcare system and its patients by: 1) personalizing time-to-evaluation recommendations based on disease urgency to improve visual outcomes; 2) standardizing screening protocols across the healthcare system to enhance quality of care; 3) expanding the capacity of the teleophthalmology screening program to increase access to care. The funded studies will establish a novel strategy for efficient and sustainable delivery of eye care and demonstrate the patient- and system-centered benefits of AI-assisted glaucoma screening within the LAC DHS healthcare system.

Todd Schneberk, MD, MS, MA, Department of Emergency Medicine
Keck School of Medicine of USC

Hospital-Based Programs to Address Interpersonal Violence in Los Angeles County: Hybrid 2 Study to Evaluate Implementation and Effectiveness

This project builds on Hospital-based Interpersonal Violence Intervention Programs (HVIP) developed in the past three years at three partnering DHS trauma centers in LA to identify hospitalized patients who are victims of interpersonal violence and to provide a longitudinal, 6-month outpatient intervention that links patients to diverse, relevant outpatient services addressing social determinants of health (SDOH) and offers care coordination and support. The developmental phase of implementing these HVIPs has been completed but, currently, they engage only a fraction of hospitalized victims of violence. Significant opportunities exist to improve patient engagement and retention as well as implementation of the intervention that is delivered in partnership with community-based organizations (CBOs) who coordinate support for victims from community health workers (CHWs) and trained peer-mentors who have personally experienced violence. The goal of this project is to use the evidence-based RE-AIM implementation framework to identify and initiate strategies to address barriers to successful conduct of HVIPs that address a significant public health gap in care.
Progress Reports: Past Awardees

Elizabeth Pyatak, PhD, OTR/L, CDCES, FAOTA, Division of Occupational Science and Occupational Therapy
Herman Ostrow School of Dentistry of USC

Addressing Uncontrolled Diabetes in Primary Care: A Lifestyle Redesign Approach (2017)

- Lowered A1c levels from 10.2% to 9.3% (p=0.003) in patients in occupational therapy program.
- Received President’s Select Abstract award for best scoring research abstract presented at the American Diabetes Association Scientific Sessions.
- Launched a Primary Care Learning Collaborative to support OT practitioners.
- Trained five occupational therapy graduate students in the practice setting of primary care, broadening their capacity to work in a variety of care settings.
- Evaluated care delivery model that improved HbA1c and physician-related distress among Latinx young adults with type 1 diabetes.
- Demonstrated efficacy of telehealth care model in improving HbA1c and diabetes distress among adolescents and young adults with type 1 diabetes.

Lello Tesema, MD, MPH, Department of Medicine
Keck School of Medicine of USC

Rapid Engagement of Patients with Substance Use Disorders through Expedited Triage (RESET): A Jail Implementation Study (2018)

- Reduced time to treatment for alcohol withdrawal in Los Angeles County jails from 66 to 33 minutes & eliminated decompensated withdrawal

David G. Armstrong, DPM, MD, PhD, Department of Surgery
Keck School of Medicine of USC

Hot Foot Line: Implementation and harmonization of an instant-triage program to speed care and eliminate preventable diabetes-related amputation (2019)

- Reduced high-level amputations (16.4% to 11.7%, p = 0.03) and length of stay (10.1 to 8.9 days, p = 0.02) for patients with diabetic foot ulcers.
- Developed the nation's first county-wide limb preservation working group.
- Received DHS Quality Award for saving one million dollars in direct costs by implementing the interdisciplinary limb preservation program at Rancho Los Amigos National Rehabilitation Center.
Progress Report: Past Awardees (continued)

Elizabeth Joe, MD, Department of Neurology
Keck School of Medicine of USC

Group Medical Visits to Improve Access and Quality of Care within DHS Neurology Clinics (2020)

• Demonstrated feasibility of delivering routine follow up care in a group setting via telemedicine for a safety net population. Patient acceptability of the group visit model was high.

• Obtained pilot data to plan future grant applications. Applying for K23 and other grants.

• The pilot group medical visits for chronic migraine have been incorporated into ongoing care in LAC DHS

Barbara Turner, MD, MSED & Shadi Dowlatshahi, MD, MSc, Department of Medicine
Keck School of Medicine of USC

Development of an Outpatient Procedure Service to Decrease Utilization of the Emergency Department (2021)

• Decreased ED utilization, reduced complications, and improved patient care by providing quick access to procedures.

• Allowed for equitable health access.

• Working with DPH to provide lumbar punctures to patients suspected of having neurosyphilis.

• Won National County Association Award.

Christina Dancz, MD, MPH, Department of Obstetrics and Gynecology
Keck School of Medicine of USC


• Progress report pending.
Secured Funding

We have received funding to develop and test complex, multi-level, team-based interventions for improving risk factor control after myocardial infarction, ischemic stroke, and intracerebral hemorrhage in the LAC DHS system, and other settings across the US. We are exploring the impact of adverse social determinants of health on patient engagement in these programs to develop novel interventions that simultaneously identify and address key social determinants of health.

Amytis Towfighi, MD, Department of Neurology
Keck School of Medicine of USC

Alejandra Casillas, MD, MS, Department of Medicine
University of California Los Angeles

BP REACH: Blood Pressure disparities Reduction, Equity, and Access among safety net patients with Cardiovascular Health risk (NIMHD)

Blood pressure (BP) control is critical for reducing risk of cardiovascular events, yet control rates in these patients remain suboptimal, particularly for populations served by safety net health systems. Building upon our experience testing multilevel complex interventions for improving BP control in LAC DHS, we will: 1) design a multilevel, culturally and linguistically tailored, complex intervention incorporating pharmacist-led medication management and chronic disease education & self-management promotion, to reduce BP among individuals with a history of stroke or MI in the LAC DHS safety-net; 2) test the impact of this intervention on SBP for individuals with a history of stroke or MI in a randomized trial in LAC DHS cardiology and neurology clinics and 3) Determine the effect of mediators on the primary outcome of systolic BP in the intervention.

Jonathan Rosand, MD, MPH, Department of Neurology
Massachusetts General Hospital

Amytis Towfighi, MD, Department of Neurology
Keck School of Medicine of USC

Race/Ethnicity, Hypertension and Prevention of VCID and Stroke after Intracerebral Hemorrhage (NINDS)

Elevated Blood Pressure (BP) is the most potent predictor of incident Vascular contributions to Cognitive Impairment and Dementia (VICD) and stroke after intracerebral hemorrhage (ICH). Yet >50% of ICH survivors have untreated hypertension after their ICH, with substantially higher rates among Black and Hispanic patients. Improving BP control following stroke remains a persistent challenge. Social determinants of health (SDOH) are key contributors to race/ethnic health inequities. We seek to: 1) determine whether modifiable SDOH in association with established biological factors, predict increased risk for VCID and recurrent stroke after ICH; 2) determine whether modifiable SDOH predict risk of poor hypertension control after ICH; 3) determine whether modifiable SDOH are associated with decreased engagement with our standardized BP management program. The data generated will be used to develop novel strategies for BP management and prevention of VCID and recurrent stroke after ICH. This is a national collaboration with six other academic medical centers: Yale University, University of Maryland, University of Hawaii, Northwestern University, Wake Forest University, and University of Texas Health.
Future Goals

1. Train 100 HDS professionals in certificate program
2. Offer Master’s Degree in Healthcare Delivery Science
3. Fund 12-15 projects with seed grants
4. Host popular annual symposium
5. Become self-sustaining

Timeline

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