

Scaling Innovation in Michigan (SIM)
A Public-Private Partnership for Michigan's Advanced Materials and Technology Future

Project Narrative

The **Scaling Innovation in Michigan (SIM)** initiative, led by the Michigan State University Research Foundation (MSURF) in partnership with Michigan State University (MSU), the HUB for Materials Advancement and Research Solutions (MARS Consortium) and Fraunhofer USA, seeks to transform Michigan into a national leader in advanced materials and manufacturing innovation. This proposal outlines two core programs, the Alliance Program and the Conquer-TechBridge Accelerator, that will drive the commercialization of advanced materials technologies, strengthen local industry partnerships, and cultivate a robust entrepreneurial ecosystem. Through targeted support for both established companies and emerging startups, these initiatives aim to foster national economic resilience, create high-skill jobs, and establish Michigan as a center of excellence in advanced manufacturing sectors critical to the Nation's technological future.

Section 1. Project Description and Overview

Section 1.a. Executive Summary

In April 2024, MSURF commissioned the Waymaker Group to develop a technology-based economic development strategy for the MARS Consortium using EDA TechHub Strategic Planning Grant funds. This strategy identified critical needs in Michigan's advanced manufacturing sector, aligning with the goals of the SIM proposal.

- **Alliance Program:** A partnership between MSURF, Fraunhofer USA, and industry leaders focused on applied research and commercialization in advanced materials. Through partially funded R&D projects, it enables companies to access research infrastructure and industry expertise, fostering new innovations.
- **Conquer-TechBridge Accelerator:** An accelerator designed for early-stage startups in advanced manufacturing and materials science. It offers a 10-week, hands-on training program with funding, mentorship, and access to corporate networks, helping startups scale and bridge the gap from research to market entry.

Section 1b: Vision, Mission, Goals, and Roles

Vision

Our vision is to position Michigan at the forefront of advanced materials innovation on a national scale. By cultivating a dynamic ecosystem that seamlessly connects industry leaders, emerging startups, and cutting-edge research institutions, we aim to make Michigan a hub for groundbreaking advancements in materials science. This ecosystem will drive economic growth, create high-quality jobs, and attract global talent, ultimately establishing Michigan as a leader in sustainable, high-impact manufacturing solutions. Our vision extends beyond State borders, with Michigan serving as a model for collaborative innovation that other Regions aspire to replicate.

Mission

Our mission is to accelerate the commercialization of advanced materials technologies by building strategic partnerships that bridge the gap between research and industry. By fostering a robust pipeline of high-growth startups, we aim to support these innovators in overcoming commercialization challenges and scaling effectively. With targeted mentorship, funding, and technical support, we are dedicated to cultivating materials-focused companies that drive innovation in automotive, aerospace, and other key sectors. This mission advances Michigan's role as a hub for advanced

manufacturing, enabling breakthrough research to move efficiently from lab to market, benefiting local communities and the broader economy.

Goals

The programs aim to drive Michigan's advanced materials sector forward by establishing ambitious yet achievable goals that will deliver tangible economic and technological impacts. We strive to achieve the following:

- Execute 15 industry-driven advanced materials research projects through the Alliance Program over five years
- Launch and accelerate approximately 25 advanced materials startups through Conquer-TechBridge Accelerator over five years
- Create sustainable programs that demonstrate value and attract continued State and private funding
- Generate significant economic impact through job creation and technology commercialization

Roles

Successful deployment of these programs is only possible if the partners involved fully commit and contribute to corporate and startup pipeline development, diverse and inclusive recruitment, and measured and timely metrics. At the heart of this effort is the partnership between the State of Michigan, MSU, MSURF, and Fraunhofer USA's research enterprise, which includes extensive materials characterization facilities. Additionally, the current MSURF Conquer Accelerator programs have already proven success, supporting over 80 companies to date, and the successful implementation of the Fraunhofer USA Alliance model in South Carolina underscore the strength of this partnership.

Specific roles and responsibilities include:

- MSURF (Lead Applicant, UEI: W4TERRVQDRE8)
 - Alliance and Conquer-TechBridge Accelerator administration and oversight
 - Connections to MSU, MARS Consortium, and broader partner research facilities
 - Management and deployment of venture funding through MSURF's captive venture funds (Red Cedar Ventures and Michigan RISE) and others
- Fraunhofer USA (Co-Applicant, UEI: VMECQP1R7FD9)
 - Provides technical expertise and research capabilities
 - Supports Alliance Program operations
 - Contributes TechBridge methodology and corporate networks
 - Conducts technical validation projects
- MARS Consortium (Partner Organizations)
 - Provides strategic guidance
 - Facilitates connections to Michigan's advanced materials industry
 - Supports program outreach and engagement

Section 2. Regional Resources and Assets

Michigan is home to over 11,000 manufacturing firms, employing more than 600,000 workers and boasting the highest concentration of engineering talent in the United States. This concentrated network is particularly strong in the automotive and aerospace sectors, creating a robust foundation and competitive advantage for advanced manufacturing innovation. Additionally, the State hosts a significant number of materials-focused industries, including composites, semiconductors, and battery materials, further supporting the ecosystem necessary for cutting-edge developments in advanced manufacturing.

Research & Development Ecosystem

Michigan's R&D ecosystem combines world-class research institutions, federal facilities, and industry-driven innovation centers. MSU's specialized facilities, including the Advanced Materials Lab and Composite Vehicle Research Center, work alongside the premier Facility for Rare Isotope Beams (FRIB) to advance materials science research. The University Research Corridor connects Michigan's R1 research universities, while Fraunhofer USA's Center Midwest provides industrial-scale research capabilities. This network is further strengthened by robust core facilities and shared equipment resources supporting materials characterization and testing.

Corporate Innovation Partners

Michigan's thriving advanced materials corporate network includes major OEMs and a growing presence of battery and semiconductor manufacturers like Ultium, Hemlock Semiconductor, KLA, and SK Siltron. A strong network of Tier 1, 2, and 3 suppliers is investing in advanced materials, driven by strategic partnerships with industry leaders fostered through initiatives like the MARS Tech Hub Consortium. This collaborative ecosystem supports the continual advancement of materials R&D and innovation across Michigan's economic base.

Financial Resources

Michigan's financial resources include an active community of angel investors and venture capital firms with expertise in materials science, along with pre-seed funding from organizations like Red Cedar Ventures and Michigan RISE. State support is also strong with funding from Michigan Economic Development Corporation (MEDC), the Michigan Competitiveness Fund, and Michigan Translational Research and Commercialization (MTRAC) programs. As well as a solid track record in securing federal research funds like the EDA TechHub Strategic Planning Grant, and the NSF Regional Engines Planning Grant. This financial backing enables high-potential projects and startups to secure the capital needed for growth.

Workforce & Talent Development

Michigan's manufacturing sector benefits from a talent pool of over 130,000 engineers and a steady pipeline from the State's robust University systems. Community colleges, like Lansing Community College (LCC), offer specialized training in advanced manufacturing, while industry-led initiatives work to continuously develop the workforce. Workforce development agencies like Michigan Labor and Economic Opportunity and Capital Area Michigan Works! regularly and proactively match seeker to employer across all industries in the Region. These resources provide companies with skilled personnel and emerging talent to support the state's growing advanced manufacturing ecosystem.

Project Alignment with MARS Consortium Tech Hub Strategy

The project aligns closely with the MARS Consortium Tech Hub strategy, advancing key goals such as the commercialization of advanced materials technologies and strengthening the connections between research institutions and industry. By supporting the growth of materials-focused startups and creating pathways for technology validation and scale-up, the project will accelerate Michigan's progress as a leader in materials innovation.

Expected Impact Beyond Primary Service Area

Both programs aim to create new supply chain relationships across the Midwest and attract companies from out of State seeking advanced materials expertise. By developing technologies with national and global market potential, Michigan can establish itself as a model for research commercialization, potentially replicable in other regions of the country. This impact extends Michigan's leadership beyond State borders, fostering growth beyond the Midwest.

The combination of these assets positions Michigan to become a national leader in advanced materials innovation. The Alliance Program will serve as a bridge, enabling Michigan companies to more easily access state-of-the-art research capabilities, reducing technical and financial risks. Concurrently, the Conquer-TechBridge program will provide critical

support to materials startups, addressing specific challenges in prototyping, validation, and scaling that traditional accelerators may not cover, as well as connections to nationally recognized programs like Michigan-based Centrepolis Accelerator that will ensure a multi-stage continuum for these participating companies.

Building a Cohesive Innovation Ecosystem

Together, the Alliance and Conquer-TechBridge programs aim to create a cohesive innovation ecosystem in Michigan by establishing structured pathways for industry access to research resources, connecting startups with validation support and industry partnerships, and leveraging global expertise.

Section 3. Proposed Solution and Scope of Work

Advanced materials represent a critical cornerstone of economic competitiveness, resilience, and national security in the US. Additionally, advanced materials underpin virtually every technology priority identified in the CHIPS and Science Act. Clearly, a crucial gap remains in translating innovations into commercial products and manufacturing capabilities, as well as building on intellectual property created here in the US.

Section 3a: Problem and Solutions

Michigan's advanced materials ecosystem faces three interconnected challenges that limit its economic impact. First, companies, especially Small to Mid-sized Enterprises SMEs, struggle to access and utilize advanced materials research capabilities due to high costs, technical risks, pace of innovation, and the specialized expertise required. Second, materials startups face unique validation and scale-up challenges that extend beyond standard accelerator support, including long development cycles, high capital requirements, and limited access to specialized equipment. Third, despite robust regional assets, the ecosystem remains fragmented, lacking structured collaboration mechanisms between industry and research institutions.

The **Alliance Program**, modeled after the successful Fraunhofer USA program in South Carolina, facilitates industry-driven research projects with a 50% cost-share model, allowing companies to tap into the array of Michigan's R&D resources at a price point that accelerates the to-market timeline. We will leverage Fraunhofer USA's global expertise alongside the State's research infrastructure to create a platform for industry to access advanced materials R&D capabilities. This model has demonstrated success through the South Carolina Fraunhofer USA Alliance, where industry partners have successfully commercialized new technologies, ultimately growing their operations and upskilling their workforce in South Carolina.

The **Conquer-TechBridge Program** fills a crucial gap in the development cycle of new advanced materials companies within the entrepreneurial ecosystem. In brief, the program is a 10-week intensive, hands-on immersive business training accelerator, that takes early-stage product and service technologies and develops the team that will take the company forward. Any qualifying business that meets the advanced materials or advanced manufacturing criteria may apply to the program. Selected teams can receive up to \$20,000 in investment from the private venture funds within MSURF or regional investment ecosystem, and work through many of the difficult business aspects common to most startup businesses.

This includes company formation, equity distribution, customer discovery, market analysis, intellectual property management, financing, forecasting, human resource (HR) management, business plan development, regulatory concerns, quality management, creating pitch decks, product development, federal grant opportunities and other important concerns. In addition to financial investment, Accelerator teams are provided with one-on-one mentorship and support, a creative working space, and resources to enable them to grow their companies, as well as access to additional funding upon completion of certain program requirements.

Section 3b. Achievability

The Michigan Alliance and Conquer-TechBridge Programs build on successful models to strengthen Michigan's manufacturing and advanced materials sectors. The Alliance Program adapts the South Carolina Fraunhofer USA Alliance model, which successfully advanced manufacturing technologies and created jobs in South Carolina, by leveraging Fraunhofer USA's Center Midwest (CMW) at MSU. The Conquer-TechBridge program unites the proven impact of the Conquer Accelerator, which has successfully supported dozens of companies, with Fraunhofer's TechBridge, with a track record for helping startups secure significant funding. This powerful collaboration will target advanced materials startups, leveraging deep industry connections and robust technical resources to drive growth and innovation.

These programs are supported by a comprehensive infrastructure, including MSU's materials research facilities and Fraunhofer USA CMW's resources, as well as strong partnerships within Michigan's manufacturing ecosystem. Through established relationships with manufacturers and support from the MSU Research Foundation, participants will gain hands-on experience with industrial equipment, specialized skills in materials testing, and direct industry connections. This infrastructure also provides a pathway for workforce development, as Alliance Program companies and Conquer-TechBridge startups are committed to building their teams and workforce in Michigan, fostering a robust talent pipeline from MSU and regional partners.

Section 3c. Affected Groups

Our programs will serve multiple stakeholder groups across Michigan's advanced materials ecosystem, creating both direct and indirect economic impacts. While SIM will primarily target SME's seeking to innovate in advanced materials but lacking the resources for independent R&D, it will also engage large companies such as automotive Original Equipment Manufacturers (OEMs). These larger corporations can utilize Alliance Program projects to drive major facility expansions or develop technologies that benefit their supplier networks. Based on the South Carolina model and Michigan's manufacturing density, we expect to engage with approximately 45-60 companies through outreach and application processes, ultimately selecting 15 for funded projects over the five-year period. The Conquer-TechBridge Program will focus on early-stage advanced materials companies, including university spinouts, independent startups, and emerging small businesses pivoting to new materials technologies. Large corporations will play a vital role here as well, serving as mentors, potential corporate venture capital partners, and customers for participating startups. We anticipate working with approximately 25 startups through the accelerator program, with each company typically employing 3-5 people during the program and projecting growth to 10-15 employees within two years of completion.

Both programs will prioritize engaging historically underserved populations and communities. For the Alliance Program, we will conduct targeted outreach to minority-owned manufacturers and those operating in economically disadvantaged areas of Michigan. The Conquer-TechBridge Program will actively recruit diverse founders and companies developing technologies that can benefit underserved communities. We will partner with organizations like the Michigan Minority Supplier Development Council and the Michigan Women's Foundation to ensure broad awareness and accessibility.

The indirect impact extends well beyond program participants. Each successful materials innovation project or startup creates ripple effects through the supply chain, typically generating 2.5-3X employment multiplier effects. Based on experience from similar programs, we expect these initiatives to indirectly affect:

- 200+ employees through workforce training and skills development
- 30+ companies through supply chain relationships
- 3+ research institutions through collaborative projects
- 100+ students through internships and experiential learning opportunities

Additionally, by focusing on advanced materials, these programs will help democratize access to cutting-edge technology development. Small manufacturers will gain capabilities previously available only to large corporations, while diverse entrepreneurs will receive specialized support to overcome the unique barriers in materials commercialization. This approach ensures that the economic benefits of materials innovation extend beyond traditional technology hubs to reach communities throughout Michigan.

Section 3d. Regional Opportunity Alignment

The timing and focus of these programs align perfectly with Michigan's current economic trajectory and the national imperative for advanced materials innovation. Michigan is experiencing a significant transformation in its manufacturing base, particularly with major investments in electric vehicle and battery production, semiconductor manufacturing, and aerospace technologies. All of these sectors depend critically on advanced materials innovation, creating immediate opportunities for both the Alliance Program and Conquer-TechBridge Accelerator to drive economic impact.

Michigan's existing strengths make this opportunity particularly compelling. Our State's deep manufacturing expertise provides an ideal testbed for new materials technologies, while our engineering talent base - the largest concentration of engineers in the nation - ensures we have the technical workforce to support innovation. The presence of the Fraunhofer USA CMW at MSU, combined with the university's extensive materials characterization facilities, provides world-class technical capabilities that both programs can leverage.

Our focus on advanced materials aligns directly with several key technology focus areas identified by the National Science Foundation, including:

- Advanced Manufacturing and Materials Engineering
- Semiconductors and Microelectronics
- Clean Technology and Clean Energy
- Quantum Technology
- Artificial Intelligence for Materials Discovery

The State is particularly well-positioned to capitalize on these opportunities due to current market dynamics and investment trends. Major OEMs are actively seeking new materials solutions for electric vehicles and sustainable manufacturing. The CHIPS Act has created unprecedented demand for advanced materials in semiconductor manufacturing. Defense and aerospace companies are pursuing new materials for light weighting and enhanced performance.

Recent investments further validate this timing. The EDA Strategic Planning Grant award to the MARS TechHub, the expansion of battery manufacturing facilities (Ultium), and the growth of semiconductor production in the State (Hemlock Semiconductor) all create immediate demand for advanced materials innovation. Our programs will help ensure that Michigan companies and entrepreneurs can fully participate in these opportunities, strengthening domestic supply chains while creating new high-wage jobs in the process.

Section 3e. Scope of Work

Over a five-year timeline, we will achieve critical milestones, including annual showcase events, startup cohort graduations, and the successful execution of Alliance projects. Each participating organization will play a pivotal role, ensuring robust program administration, technical validation, and strategic industry engagement to drive Michigan's leadership in advanced manufacturing. In the initial six months, the programs will focus on establishing the Alliance Review Board, setting up project selection processes, launching marketing and outreach efforts, and beginning the intake of Alliance project applications. Simultaneously, an integrated curriculum for the Conquer-TechBridge Accelerator program will be developed.

Moving into months seven through twelve, the Alliance Review Board will select and kick off the first round of Alliance projects, launch the inaugural Conquer-TechBridge Accelerator cohort, complete the initial technical validation projects, and host the first set of annual showcase events.

Over the following years, annual targets will include executing three Alliance projects, graduating six startups from Conquer-TechBridge Accelerator, hosting showcase events, and delivering quarterly progress reports.

Metrics on economic impact, including job creation, capital raised by startups, technical milestones, and new products commercialized, will be closely tracked and reported. Key performance indicators will cover the number and value of Alliance projects, job creation and retention, and investment capital raised, with attention to revenue growth and geographic impact across Michigan. Participation rates from underserved communities will also be measured, ensuring inclusivity in the programs' reach and impact.

Section 4: Collaboration and Partnerships

Section 4a: Partnerships

These programs leverage an extensive network of partnerships built through decades of organizational collaborations. MSURF has successfully coordinated multiple accelerator programs with regional partners, while Fraunhofer USA has demonstrated effective industry engagement through both their own TechBridge program and the South Carolina Alliance. By combining MSURF's regional leadership with Fraunhofer USA's global network and expertise, our programs will create unprecedented opportunities for Michigan companies to access world-class resources and connections.

State and Regional Partners:

- Michigan Economic Development Corporation (MEDC) - Providing strategic support and connections to state resources
- Michigan Department of Labor and Economic Opportunity - Supporting workforce development initiatives
- Local economic development organizations including LEAP (Lansing Economic Area Partnership)
- Capital Area Michigan Works! - providing workforce development support for both industry and startups
- The University Research Corridor (URC), representing the R1 Universities of the State

Research and Technical Partners:

- MSU - Providing access to research facilities and technical expertise
- The MARS Consortium - Facilitating industry connections and strategic guidance
- Additional Fraunhofer Institutes globally - Offering specialized technical capabilities across materials, manufacturing, electronics, and other relevant domains

Industry Partners:

- Major OEMs in automotive, aerospace, nuclear and semiconductor sectors
- National Tier 1,2, and 3 suppliers seeking materials innovation
- Capital Area Manufacturing Council and Automation Alley, extending reach to State and Regional manufacturing companies
- Corporate venture groups and strategic investors

Entrepreneurial Support:

- Centropolis Accelerator - Collaborating on advanced manufacturing support
- Michigan's SmartZone Network - Supporting regional entrepreneurship
- Detroit Materials Exchange - Providing materials testing and validation services

Financial Partners:

- Red Cedar Ventures - Providing investment capital for startups
- Michigan RISE - Offering pre-seed funding and Purchase Order Financing offerings for startups
- Regional angel networks and venture capital firms

Section 4b: Equity and Inclusion

Our commitment to equity and inclusion is fundamental to both the programs' design and implementation, recognizing that innovation ecosystems are strongest when they draw from all available talent and serve diverse communities. We will implement specific strategies to ensure broad participation and equitable access.

To ensure targeted outreach and recruitment, we will partner with organizations that serve underrepresented communities in technology and manufacturing, including:

- Michigan Minority Supplier Development Council
- Michigan Women's Business Council
- Melanated Business Alliance of Greater Lansing
- Michigan Hispanic Chamber of Commerce
- Native American Business Alliance

For the Alliance Program, we will conduct specific outreach to minority-owned manufacturers and those operating in economically disadvantaged areas of Michigan. This includes working with MEDC's Minority Business Development team to identify and engage potential participants, particularly in communities with traditional manufacturing bases that have faced economic challenges.

For the Conquer-TechBridge Accelerator Program, we will implement inclusive recruitment strategies focusing on diverse founders and technologies that address underserved market needs. We will work with MSU's diversity, equity, and inclusion offices and multicultural business programs to identify promising entrepreneurs and technologies.

To better ensure program accessibility, we will provide flexible delivery options that will accommodate schedules and locations, including offering:

- Additional technical support to companies that may lack in-house R&D capabilities
- Mentorship connections with diverse business leaders
- Connections to financial partners that ensure equitable access to capital
- Assistance with proposal development for applicants

While our programs will be centered in Mid-Michigan, we will ensure broad geographic accessibility by providing flexible delivery options, regional and rural outreach, as well as virtual platforms for broad geographic participation across Michigan and beyond. In addition, we will be collecting metrics that track diversity and community impact. These metrics will include, but not be limited to:

- Geographic distribution of participating companies
- Demographic data on company ownership and leadership
- Job creation in underserved communities

- Technology applications benefiting diverse populations
- Program accessibility and participation rates

Section 5. Measurable Goals and Outcomes

The following outcomes will measure the initiative's success:

- **Alliance Program:** Complete sufficient projects to meet annual funding targets, with an 80% project completion rate and targeted R&D investment milestones.
- **Conquer-TechBridge Accelerator:** Graduate approximately 25 advanced materials startups with an 85% two-year survival rate and expected growth to 10-15 employees within two years post-completion.
- **Ecosystem Impact:** Track direct and indirect job creation, private investment, diversity metrics, and industry partnerships formed.

Our programs will track specific, measurable outcomes that demonstrate both immediate and long-term economic benefits. The following specific, measurable, achievable, realistic, and timely (SMART) goals and metrics will be used to measure impact:

Alliance Program

- Execute enough projects to fully utilize the matching funds from EDA and State of Michigan each year for the 5 years (likely 4-5 per year)
- Achieve 80% project completion rate with defined technical milestones met
- Generate at least 2X in follow-on R&D investment from participating companies

Conquer-TechBridge Accelerator

- Graduate at least 20 advanced materials startups over 5 years
- Achieve 85% two-year company survival rate
- Generate \$1M in follow-on investment or non-dilutive funding for participating startups
- Support the creation of 30 new direct jobs through company growth

We anticipate the Indirect economic impact from the successful implementation to include National, State, Regional, and Local business attraction, retention, and expansion; increased wages; and new market opportunities for those companies. These programs will also contribute to ecosystem development which we will measure by geographic distribution of participants, diversity of participating companies, new industry partnerships formed and expanded supply chain relationships.

Section 5a: Data Infrastructure. We will be utilizing our 2FA Salesforce instance as our data and client management system. Salesforce provides a robust platform for tracking metrics in a machine-readable format, including real-time data updates, custom reports, and API integrations. The system is already fully implemented and used to manage client data, performance metrics, and project outcomes. Salesforce's cloud-based infrastructure also ensures secure and scalable data management and governance, enabling compliance with Federal reporting standards. The project budget includes ongoing Salesforce licensing and support costs to ensure seamless data collecting and reporting. We will collect this information through several methods, including:

- Direct reporting from participating companies
- Quarterly economic impact surveys
- Project completion reports from MSURF, Fraunhofer USA, and other partner organizations
- Investment tracking through financial partners
- Regular participant interviews, surveys, and case studies

Section 6: Sustainability Plan

To ensure long-term viability, the **Alliance Program** will transition to State-level funding after the initial EDA grant period, building on a model similar to South Carolina Fraunhofer USA Alliance. With support from MEDC and industry partnerships, the program will expand beyond advanced materials to serve all manufacturing sectors, while maintaining a heavy focus on our competitive advantages.

The **Conquer-TechBridge Accelerator** will diversify revenue through corporate sponsorships and partnerships and Local and State grants. Corporate partnerships will co-brand events, seminars, and Demo Day events, providing sustained operational funding and engagement opportunities.

Both programs will drive Michigan's MARS Consortium Tech Hub initiative, establishing infrastructure that sustains technology commercialization and industry collaboration. By the end of the grant period, revenue from industry support, state funding, and alumni networks will fully support operations, ensuring accessibility for startups and small companies.

We recognize potential challenges including economic cycles affecting industry participation, changes in state funding priorities, and market shifts in focus technologies. To address these risks, we will maintain flexible program structures adaptable to changing needs while building strong industry advocacy through documented success. The five-year EDA funding period will allow us to demonstrate clear program value, build strong stakeholder relationships, and establish operational efficiency.

By the end of the grant period, we project that combined program revenues from State support, industry participation, and program services will fully sustain operations while maintaining accessibility for small companies and startups through continued cost-sharing and support programs. This sustainability model, coupled with our programs' integral role in the MARS Consortium Tech Hub ecosystem, ensures that these initiatives will continue to drive advanced materials innovation in Michigan well beyond the initial funding period.