



Policies & Procedures for Funding Grants

FIERF Technical Project Management

Mission: The Forging Industry Educational and Research Foundation connects the educational community and the industry to:

- **Develop the future workforce**
- **Promote forged products and research**
- **Facilitate technology transfer**

Our organization achieves this by actively engaging with our magnet school universities to provide scholarships, internships, professional mentoring, education and research opportunities which are all intended to help the forging industry compete in the global market.

Desired Outcomes of FIERF Funded Research

Outcomes that will be considered the greatest success will be those of significant immediate use to and application by the Forging Industry. Examples include:

- Students employed in the forging supply chain
- Engagement of FIA Member Companies in the research process
- Shop floor acceptance of a technology developed during a project
- Forging Industry Technical Conference presentation
- New Forging University module
- Research that results in innovative technologies to the forging industry
- Research that advances areas identified in the Forging Industry Technology Roadmap.

Project Structure

FIERF funded projects are diverse in their scope, topics and duration. The following is intended to be a general guideline that provides a template for FIERF stage gated projects lasting longer than 1 year and at a funding level greater than \$10,000.

Stage Gate Approach

The FIERF Board has implemented the use of the stage gate process to manage industry research projects. The stage gate process breaks down a project into logical subsections, and based on measureable metrics, controls the advancement to the next phase or stage. This process focuses the R&D on ultimate implementation while managing risk. Key to the success of the process is constant interaction with ultimate users of the technology AND disciplined adherence to the process itself. The general approach for the FIERF process is adapted from Robert G. Cooper's book, *Winning at New Products*¹. The stages identified for typical FIERF projects include:

¹ Robert G. Cooper, *Winning at New Products*, 4th Edition, 2011, Basic Books, pg. 40

1. Idea generation (voice of the customer)
 - a. Identification of potential new areas of research; Technology Roadmap
 - b. Literature review/feasibility analysis
2. Scope of Work
 - a. Building a technical and business case
 - b. Why this is important
3. Define a solution path; plan of investigation
 - a. How will we answer the question; solve the problem
 - b. Literature review/feasibility analysis
4. Research and Development
 - a. Detailed work to be completed
 - b. Metrics and deliverables with timing
5. Technology Transfer and Workforce Development
 - a. Technical paper posted on FIA Website for members
 - b. Presentation at Technical Conference
 - c. Forging University – Training module
 - d. FIA Handbook; Best Practices
 - e. Deployment of students to work in the forging industry

For research and development projects, the number of phases or stages can vary. Successful completion requires meeting or exceeding the required metrics established at the start of the project. For example, a project may consist of a literature search, building of a test apparatus, and an actual test stage. A gate would be established between the project phases, and successful completion of a phase or stage would release the funding for the next phase and approve the start of the subsequent phase.

Stage Gate Metrics

Stage gates should be in the first half of the project. Clear, measureable metrics to be achieved at the end of each phase are to be established along with funding required. Requested funding levels are to be commensurate with the work completed and the metrics for each stage.

By setting measurable metrics – as defined by customers of the technology - that need to be met at the end of each stage before advancement to the following stage, failing projects can be identified early in the process. The cost for each phase tends to increase the further a project advances, and stopping an unsuccessful project can save R& D funds. The stage gate process also facilitates the advancements of successful projects by focusing the researcher's efforts on following a process plan as well as meeting the established metrics for each stage.

Since it is FIERF's mission to disseminate research information to the FIA membership, all projects must have a written report submitted at the end each project. This report must be included as a task in the final phase or stage of all projects

Industry Interface Team (5 person maximum)

The purpose of the industry interface team is to facilitate in the communication and management of FIERF funded projects. Members of this team are a resource for industry based technical assistance and facilitate in kind support of the project. Regular meetings are to be held (in person, web or teleconference) with the industry interface team to review the project status.

The grant application must identify a Project Champion and one or more Industry Partner Companies.

The industry interface team will make a determination at each stage gate if the identified metrics have been met. If so, the team will make a recommendation (through the FIA/FIERF Staff Liaison) to the FIERF Executive Committee to release funding for the next phase of the project. The FIERF Executive Committee will authorize the release of funds. If metrics have not been met, the project will be on hold pending completion of necessary tasks or terminated for lack of results.

The industry interface team will consist of the following:

Principal Investigator

- FIERF Magnet School Professor responsible for the timely completion of the project
- Expectations:
 - Timely submission of project proposal with students and industry interface team clearly identified
 - Provides student(s) the opportunity to have professional level interactions and level of work on the project
 - Provides student(s) with industry relevant interaction/plant visits
 - Works with industry interface team to incorporate any recommendations made by the FIA Technical Committee
 - Communicates with regularly with team to keep them abreast of project status
 - Responsible for delivery of state gate reports for the team's review
 - Contribute to industry publications on the project as requested
 - Ensures timely billing of project funds
 - Commits to Technical Conference presentation to transfer technology to industry

Industry Representative to the FIERF Magnet School- "Long Term Relationship"

- FIERF named key contact to a specific magnet school
 - Standing position to facilitate engagement and support
 - Typically has some close connection with the school; alum; geographical; etc.
 - Tasked with providing routine updates on activities at the magnet school to the Technical Committee and FEIRF Board
- Early involvement and facilitation of project proposal development
 - Understands the need of industry from involvement with FIA/FIERF; understands the capabilities of the magnet school.
 - Works with the magnets school to develop potential projects and identify industry partners
- This person may also serve as the Project Champion

Project Champion - “I will support/manage this project”

- Member of Tech Committee or FIERF Board
 - May have assisted in the development of the project proposal
- Point contact for project; responsible for coordinating regular meetings with the researcher
- Tasked with reporting project status to Tech Committee and FIERF Board
- Makes recommendations to the FIERF Executive Committee regarding the release of stage gate funds based on the successful completion of the agreed deliverables

Industry Partner(s) - “Voice of Customer”

- Representative of one or more FIA member companies who are stake holders in the project
 - One person from the company to serve as point contact for the project
 - Industry partners are identified on the grant proposal forms.
 - An identified industry partner company is required for all projects.
- Expected to provide in kind contribution of time, materials, plant visits, etc.

Industry Committee Rep - Industry technical mentor/advisor (as required)

- Not from the industry partner companies
- Supporting role from the technology side

FIA/FIERF Staff Liaison

- Acts as liaison between professor, industry representatives and project team
- Provides input to project team re: industry partners, resources, etc.
- Coordinates grant submissions to be reviewed by FIA Technical Committee (including rating system)
- Places FIA Technical Committee recommendations on FIERF Board Agenda
- Communicates FIERF Board discussions to project team
- Produces formal letters of agreement with universities
- Administration of stage gate reviews
- Takes recommendations of project team to FIERF Executive Committee to release stage gate funding
- Coordinates reports for distribution to FIA Members via Quick Read and posting on Technical Library of website; Presentation at Technical Conference to transfer technology to industry
- Closes project with final payment and close letter to university.

TERMS AND CONDITIONS

Awards Education grants may not be used to purchase equipment.

Up to ten percent (10%) of the total direct cost may be allocated for administrative expenses in lieu of indirect costs.

Grants will normally be made to organizations and not to individuals.

All printed materials produced as part of the proposal or project will acknowledge FIERF by including the statement "Funding in whole or in part by the Forging Industry Educational and Research Foundation".

PROJECT SELECTION

All proposals must be submitted by March 1st to the Executive Director of the Foundation. The Forging Industry Association's Technical Committee will review and rank based on the follow criteria and (weight factor):

- Addresses Needs of the Industry (5)
- Educational Value (5)
- Industry Partners & Students identified (3)
- Clearly Defined Metrics and Deliverables (3)
- Clear Stage Gate Task Plan (2)
- Complexity/Achievable within Timeframe (2)

The Technical Committee will rank and recommend projects to the FIERF Board of Trustee who will make grants based on available funding.

Revised December, 2016

Forging Industry Educational and Research Foundation
1111 Superior Avenue, Suite 615, Cleveland, OH
216.862.6967 foundation@forging.org