

Center Structure

The Center for Fundamental Studies of Advanced Sustainable Iron and Steel will be structured to meet all operational requirements and guidelines of the I/UCRC program. The Center will be a true partnership of academic institutions, industry, and governmental organizations with research interests in sustainable iron and steel making. This partnership will leverage the strengths of each partner and pool resources to address a diverse spectrum of interdisciplinary research questions of mutual benefit to Center members. The synergy of these new partnerships will enable the Center to provide benefits to participants that are greater than each member's individual financial investment.

As outlined in the NSF program solicitation, the Center's membership will consist of university partners, regular industry and government members, and affiliate industry members. The university partners will be responsible for all administrative management aspects of the Center and will also direct and complete each of the Center's research tasks. The university partners share a focus of broadening the participation of underrepresented students and faculty in science and engineering research. An additional focus of each research project subgroup will be to fully involve both graduate and undergraduate student researchers in substantive research activities. Michigan Tech and the University of Utah have strong existing graduate programs in relevant disciplines. Michigan Tech's NSF-funded Sustainable Futures Institute IGERT program will provide a framework for the project's interdisciplinary graduate work in sustainability-related issues. In addition, each university has an extensive structure for undergraduate research opportunities (at MTU: Summer Undergraduate Research Program; at U of U: Undergraduate Research Opportunities Program). The structure, mentoring, and development activities of these current undergraduate research programs will be utilized and expanded upon for I/UCRC research efforts.

MTU and U of U, the two primary university partners, will lead development of the Center during the planning phase. The structure is such that additional university partners can be integrated as Center research projects develop. New university partners will be carefully considered only if the benefit to the Center and member organizations is clear. In addition, any new member would be required to conform to support guidelines outlined in NSF's I/UCRC guidelines.

Oversight at the university level will be provided by each institution's Vice President for Research. S.K. Kawatra at MTU will serve as the Center Director; H.Y. Sohn of University of Utah will be Co-Director. Each will serve as site director at their respective institution. The Center Director will be assisted by a Center Coordinator at MTU. The Coordinator will be responsible for business aspects of Center management, including budgets, operations, travel, procurements, industry correspondences, and other interactions of the Center.

MTU's Vice President for Governmental Relations, Dr. Dale Tahtinen, has agreed to serve as evaluator for the project.

A University Policy Committee will be formed that will include research administrators from each site. This committee will be called upon to resolve any issues in the Center regarding academic administration, including any inter-university administrative issues.

An Industrial Advisory Board will be formed of members from each participating organization, as outlined in the I/UCRC guidelines. A membership agreement has been drafted and will be reviewed and finalized during the planning process. The draft agreement addresses intellectual property rights, publication delays, and technology transfer. Regular members will have full and equal access to all intellectual property (IP) developed by the Center.

Small business (affiliate members) may invest in the Center at a reduced rate and benefit from relevant areas of research. Specific policies for affiliate members will be developed during the planning phase. The Industrial Advisory Board will be responsible for review of on-going and completed projects and will provide recommendations and resources for new projects.

Each site (initially MTU and U of U) will be led by a site director using the structure found in Figure 1. Each site's director will lead research projects and oversee all projects at that site. The director will also coordinate all faculty investigators at that site through the faculty advising team. The advising team will be chaired by the site director and will meet regularly to discuss on-going projects and plan for future Center projects. Center research projects will be focused under one or more of each site's I/UCRC research project areas, outlined in this proposal. Each project will be led by a faculty principal investigator and will involve a diverse team of graduate and undergraduate students.

The research practices of the Center will include close collaboration between university partners and member organizations. Regular (monthly or semimonthly) progress reports will be provided to Center members throughout the life of each research project, keeping the flow of information multi-directional between university researchers and member organizations. Regular communication will ensure that each Center participant benefits from the research results, knowledge, and insights of the full project team. The involvement of both graduate and undergraduate students in members' research projects will ensure that these students are knowledgeable in areas of particular interest to industry upon graduation.

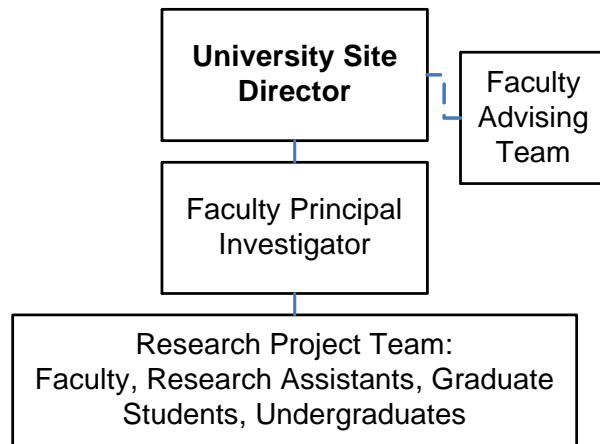


Figure 1: Research Project Structure

I/UCRC: Center for Fundamental Studies of Advanced Sustainable Iron and Steel

Financial Plan

In accordance with NSF I/UCRC program requirements, the initial goal of the Center is to attract over ten members per site and over \$600,000 in total annual support. Because plans are tentative at this stage of the Center's development and definite budgets cannot be developed yet, this benchmark will be used for the initial budgeting and financial plan. During the planning phase, pre-planning meetings, and development of the operational proposal, a more specific financial plan will be developed.

Projected Annual Operating Goals for Proposed Center for Fundamental Studies of Advanced Sustainable Iron and Steel					
	NSF Funds	Industry Membership Fees	Industry Equipment Donations	University Waived Indirect Costs	Projected Totals
MTU					
Research Projects	35,000	275,000		154,000	464,000
Equipment	20,000		75,000		95,000
Operations	25,000	25,000		14,000	64,000
Evaluation	9,000				9,000
Subtotal	89,000	300,000	75,000	168,000	632,000
U of Utah					
Research Projects	35,000	275,000		136,125	446,125
Equipment	20,000		75,000		95,000
Operations	15,000	25,000		12,375	52,375
Evaluation	6,000				6,000
Subtotal	76,000	300,000	75,000	148,500	599,500
Totals	165,000	600,000	150,000	316,500	1,231,500

Notes:

Waived overhead is calculated at MTU's IDC rate of 56% and U of Utah's IDC rate of 49.5%

Membership fee projections are based on a “base” of ten members per site. The MTU administration has approved their portion of the indirect cost waiver. The University of Utah amounts are contingent on approval of the indirect cost waiver by the university.

The proposed Center budget includes initial funds from the National Science Foundation, Center Membership Fees, donated equipment from Center members, and university cost-sharing. University cost sharing will include waiving of overhead on all membership fees, a significant savings to the center budget and significant commitment from each partner university.

In addition to these base budget projections, as research project areas and specific research projects are finalized during the planning phase, additional sources of research support will be budgeted and solicited in the form of federal/state grants and “industry enhancement” special projects. Specific goals will be developed for additional funding in each year, guided by the Center’s annual research plan, industry demands, and the planned allocation of Center research time.