



NSF IUCRC Annual Directors Meeting
Promoting I/UCRC Best Practices



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A Toolkit for I/UCRC Directors and Expanded I/UCRC Case Study

**Dr. Antonette Logar, Mr. Roger Schrader
Matthew DesEnfants (Soph), Jordan Ritz (Soph),
Jaelle Scheuerman (Soph)**

**South Dakota School of Mines and Technology
Center for Friction Stir Processing**

**Dr. Janis Terpenney (Director)
Raj Kesharwani (GRA), Yanfeng Li (GRA)
Virginia Tech Center E-Design**

**Mr. William Arbegast
CFSP Center Director
South Dakota School of Mines and Technology**

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Outline

- **Status of NSF Supplemental: Enhancement, Evaluation, and Dissemination of “Multi-University I/UCRC Management Tools- A Case Study”** (SDSMT - Mr. William Arbegast)
- **Status of NSF Supplemental: Dynamic Web Based Methods and Tools for Multi-University I/UCRC Management, Data Integration and Decision Support – Phase I** (SDSMT- Mr. William Arbegast)
- **Demonstration of Dynamic Web Based Methods and Tools for Multi-University I/UCRC Management – Phase I** (SDSMT- Mr. Jordan Ritz)
- **Status of NSF Supplemental: Dynamic Web Based Methods and Tools for Multi-University I/UCRC Management, Data Integration and Decision Support – Phase I** (Virginia Tech – Dr. Janis Terpenney)



Enhancement, Evaluation, and Dissemination of “Multi-University I/UCRC Management Tools- A Case Study”


- **Program Task Plan**
 - **Rewriting and enhancing the existing supplement to the Gray and Walters IUCRC Book (reported on at last Directors Meeting)**
 - **Disseminating the resulting documents and, where appropriate, tools.**
 - **Soliciting input from other I/UCRCs through a web-based feedback system on the CFSP case study.**
 - **Soliciting additional sections and case studies from other centers for inclusion in an additional chapter or chapters.**



Enhancement, Evaluation, and Dissemination of “Multi-University I/UCRC Management Tools- A Case Study”

Program Status:

- Revision 8 to the “Book” can be found at <http://ampcenter.sdsmt.edu/docs/test07012008.pdf>
- Policies, Procedures, and Practices at the CFSP continue to be documented and incorporated into the “Book”
- Wiki format selected for external review and comments
 - Best if viewed with Mozilla Firefox
 - IE does not support automatic numbering
 - <http://trac.mcs.sdsmt.edu/securewiki>
- Three types of access
 - administrator : can change the main pages
 - commentator : can add comments to sections
 - spectator : read-only access to the site




National Science Foundation

**Multi-University I/UCRC
Management Tools
- A Case Study -**


Antonette Logar
Edward Corwin
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South Dakota School of Mines and Technology
Rapid City, South Dakota



Center for Friction Stir Processing

Participating Site Universities:



DRAFT - Distribution Limited to NSF IUCRC Center Directors



Enhancement, Evaluation, and Dissemination of “Multi-University I/UCRC Management Tools- A Case Study”

Program Status:

- NSF I/UCRC center directors will be notified via email when the Wiki site is complete.
- Directors will be given commentator access if requested
 - enter comments, provide links to sites or tools
 - encouraged to provide email in restricted section to facilitate communication between directors
- As with all Wikis, content will be reviewed for appropriateness and excised if needed

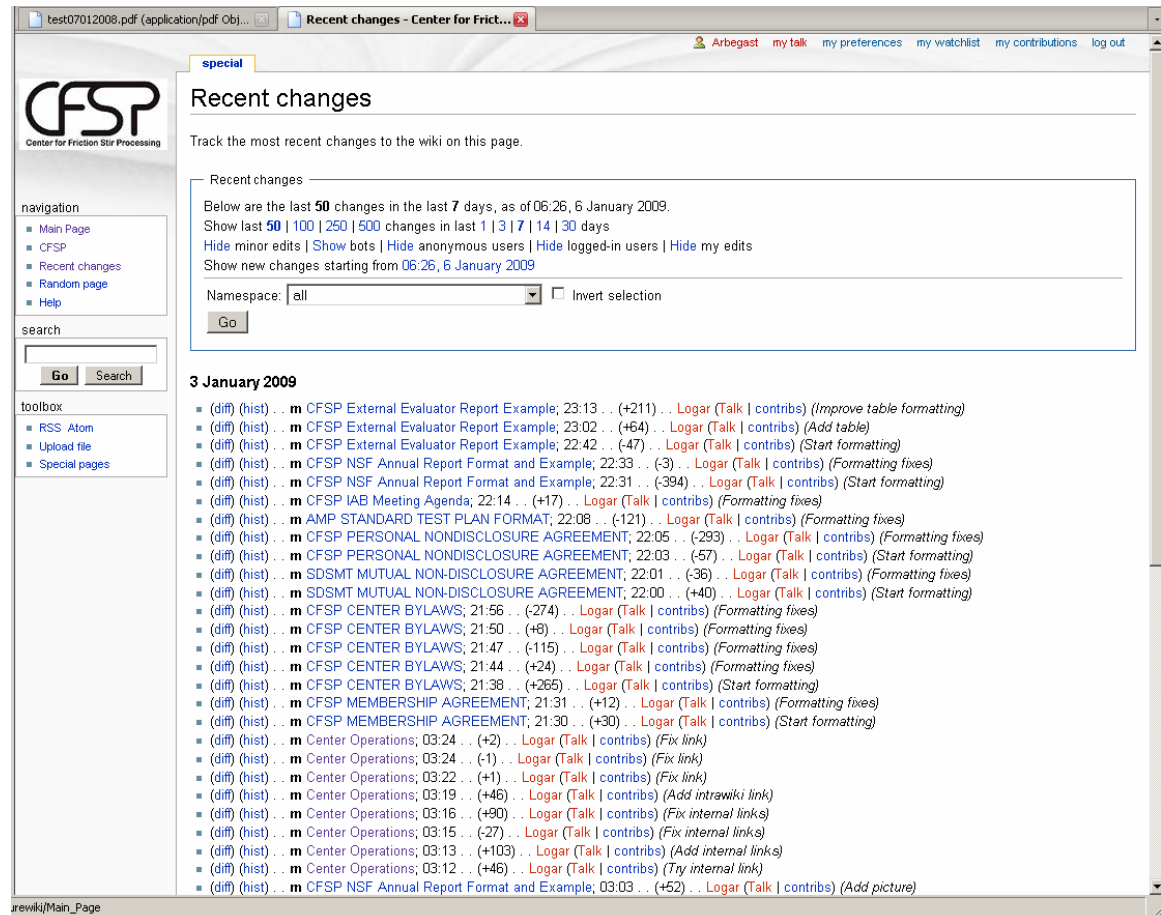
The screenshot shows a web browser window displaying a Wiki page for 'The Center for Friction Stir Processing'. The page has a navigation sidebar on the left with options like 'Main Page', 'CFSP', 'Recent changes', 'Random page', and 'Help'. The main content area features a 'Contents' table of contents with sections 1 through 1.8, including 'CFSP Vision', 'Mission Statement', 'Research Objectives', 'Policies Procedures and Practices (P3)', 'Center Structure', 'Partner Site', 'Electronic Resources', and 'Budgets and MIPR'. Below the table of contents, the page title '1. The Center for Friction Stir Processing' is followed by an introductory paragraph about the IUCRC program, its funding by the NSF, and its collaborative nature involving industry, academia, and government. The text mentions the establishment of CFSP in 2004 and lists participating universities: South Dakota School of Mines and Technology (SDSMT), University of South Carolina (USC), Brigham Young University (BYU), and the University of Missouri - Rolla (UMR). It also notes that Wichita State University (WSU) was added in 2007 and that over 25 industry and government sponsors from five countries provide funding.



Enhancement, Evaluation, and Dissemination of “Multi-University I/UCRC Management Tools- A Case Study”

Program Status:

- Tools section
 - commentators share links to useful tools
 - will contain links to tools developed by CFSP
- Downloads available for forms of general interest
- Help on Wiki formatting will be provided
- Each section will have a comment page
- Comments stored in database
- Section for sharing additional approaches not covered by CFSP case study





Dynamic Web Based Methods and Tools for Multi-University I/UCRC Management, Data Integration and Decision Support – Phase I (SDSMT)

Program Status:

- The interactive CFSP Website has been activated and is currently in use by both the CFSP University Partners and IAB Members

<http://cfsp.sdsmt.edu/view.php?p=1000>

- A secure Login Portal is available for IAB Members and University Partners
- Marketing information, news, and events information is available to the general public

Center for Friction Stir Processing

Members | Mission | Projects | Infrastructure | Technology | Login

Home | Search | Highlights | News | Events | IAB MEETING SITE STATUS | Next CFSP Spring Meeting

National Science Foundation
Center for Friction Stir Processing I/UCRC University Partners

South Dakota School of Mines
Mr. William Arbeggast (Center Director)
Dr. Michael West (Site Director and PI)

University of South Carolina
Dr. Anthony Reynolds (Site Director and PI)

Brigham Young University
Dr. Tracy Nelson (Site Director and PI)
Dr. Carl Sorensen (PI)

Missouri University of Science and Technology
Dr. Rajiv Mishra (Site Director and PI)

Wichita State University
Dr. Dwight Burford (Site Director and PI)

National Science Foundation

This multi-institutional National Science Foundation Friction Stir Processing Industry/University Cooperative Research Center (I/UCRC) was started in October 2004. Four leading programs on Friction Stir Welding and Processing at the South Dakota School of Mines and Technology (SDSM&T), Brigham Young University (BYU), the University of South Carolina (USC), the Missouri University of Science and Technology (MST), and the Wichita State University (WSU) formed a partnership for this center. SDSM&T is the lead institution for the Center. Friction Stir Welding (FSW) is a revolutionary solid-state (below solidus) joining technology patented by The Welding Institute (TWI-UK) in 1991. It has seen an explosive growth in research, development, and application over the last decade. FSW has shown higher strengths, fewer defects, lower residual stress, and less distortion in single pass, full penetration, thick section (>1 inch) aluminum applications. FSW of metal matrix composite, titanium, and ferrous alloys still require fundamental research to maximize this technology. Friction Stir Processing (a variant of FSW) has received increased interest as a rivet replacement technology and a microstructural modification technique to induce superplasticity in thick section materials, to locally modify the microstructure in complex castings and to add micron and submicron particles into metal surfaces.

Industrial Partners
Boeing Phantom Works
MTS Systems Corporation
Sikorsky Aircraft Systems
Cummins, Inc.

Industrial Partners
EADS Airbus
Kaiser Aluminum
Lockheed Martin Corp.
NASA Langley Res. Center
General Motors
Spirit Aero Systems

Industrial Partners
Advanced Metals Prod.
Hitachi, Ltd.
JFE Steel
Mitsubishi, H.I., Ltd.
Swedish Nuclear Fuel & Waste Management Co

Industrial Partners
Boeing Phantom Works
Friction Stir Link
General Motors
Pacific NW National Labs

Industrial Partners
Bombardier
General Motors
Hawker Beechcraft
Embraer

[Home] [Members] [Mission] [Infrastructure] [Search] [Login]
Email your comments to: william.arbeggast@sdsmt.edu



Dynamic Web Based Methods and Tools for Multi-University I/UCRC Management, Data Integration and Decision Support – Phase I (SDSMT)

Program Status:

- Implemented tools:
 - Project management system
 - Personnel management system
 - Paper review system
 - LIFE Form system
 - Meeting document management
 - Customizable templates
 - Quarterly report systems
 - Center action items
- Planned tools:
 - Full file upload system
 - Site specific action items
 - Best practices rubric

The screenshot shows the CFSP website interface. At the top, there is a header with the NSF logo and the text 'Center for Friction Stir Processing' and 'CFSP'. Below the header is a navigation bar with links for 'Members', 'Mission', 'Projects', 'Infrastructure', 'Technology', and 'Login'. On the left side, there is a sidebar with buttons for 'Home', 'Search', 'Highlights', 'News', and 'Events'. Below the sidebar, there are links for 'IAB MEETING', 'SITE STATUS', and 'Next CFSP Spring Meeting'. The main content area is titled 'CFSP Document and Database access' and contains a list of links: 'Documents', 'Meetings', 'CFSP Projects', 'Center Action Items', 'CFSP Proposals', 'Paper Review', 'CFSP Publications', 'CFSP Member Agreements and Bylaws', 'CFSP I/UCRC Quarterly Reports', 'CFSP I/UCRC Annual Reports', 'CFSP I/UCRC Test Procedures', 'CFSP Templates', and 'Miscellaneous Documents'. There are also buttons for 'Upload Documents' and 'CFSP Personnel'. At the bottom, there is a footer with links for 'Home', 'Members', 'Mission', 'Infrastructure', 'Search', and 'Login', and an email address: 'Email your comments to: william.arbegast@sdsmt.edu'.



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Promoting I/UCRC Best Practices



Dynamic Web Based Methods and Tools for Multi-University I/UCRC Management, Data Integration and Decision Support – Phase I (SDSMT)

Program Status:

- **Demonstrations of Current Management Tools -**
 - **Mr. Jordan Ritz – Sophomore, Math and Computer Science Department, SDSMT**



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Promoting I/UCRC Best Practices



Dynamic Web Based Methods and Tools for Multi-University I/UCRC Management, Data Integration and Decision Support – Phase I (Virginia Tech)

Dr. Janis Terpenney Presentation