



**MANUFACTURING & MATERIALS
JOINING INNOVATION CENTER**

**Manufacturing and Materials Joining Innovation
Center (Ma²JIC) Bylaws**

The Ohio State University (Lead)
Colorado School of Mines
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Approved by **MA²JIC** IAB on 1/30/2019

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1. Introduction

The following Bylaws will be used to govern this Center. If there are any inconsistencies between Bylaws and the membership agreement, the membership agreement takes precedence.

2. Mission

Technical needs related to materials joining in fossil energy, nuclear energy, alternative energy, energy efficiency, and energy storage applications have been identified. These needs can be grouped under six broad categories, i.e., (1) joining of existing materials, (2) joining of new advanced materials, (3) joining of dissimilar materials, (4) additive manufacturing of materials, (5) life extension, and (6) rapid evaluation of life. To address the above needs, this NSF Industry and University Cooperative Research Center (I/UCRC) for Manufacturing and Materials Joining Innovation (Ma²JIC) has been formed.

In Ma²JIC, scientifically based methodologies for assessing material weldability (different length scales) will be developed. The mission of the center will include the following objectives: (1) reduction of the time and cost of deploying advanced materials for the energy infrastructure, (2) extending the life of material joints within the energy infrastructure, and (3) addressing the critical need for training and preparation of engineering graduates with welding and joining expertise.

The center will conduct research projects that will include one or more of the following topics and represent the thrust areas of the center: (1) advanced joining processes, (2) innovative process control and automation, (3) material development, (4) weldability, quality, and characterization, and (5) integrated process modeling. The center will operate in four universities and any other research site supported by this center through NSF. Many organizations including small-businesses, non-profit organizations, government national laboratories, medium size businesses, and large corporations will be an integral part of this center.

3. Benefits of the Membership

All Full Members will have non-exclusive rights to access and use the entire Center research portfolio under the conditions outlined in the Membership Agreement.

3.1 These rights are only valid during any term(s) of membership to the Center after annual dues have been paid. (Membership dues are considered “paid” when financial and/or in-kind support has been received by the pertinent research site or the member has signed the agreement with the intention of providing financial and/or in-kind support.)

- a. Note that each member is not on the same annual calendar for payment of dues.
- b. All results of center research will be posted in a series of password-protected center web pages.
 - a. An IAB web page will be created for each annual term (~12 months) of center operation (the start of each term to begin on September 1st of each year).
- c. Only center members who are active (paid dues) during an annual period will receive website access for that year.

3.2 These rights are granted to only the Full Member Companies (as stated on the Membership Agreement) and their Corporate Parents/Subsidiaries.

3.3 All Members will have the opportunity to:

- a. Contribute to Ma²JIC research and education programs
- b. Propose case study problems, specific research problems, and focus areas for research
- c. Host postdoctoral research associates and/or graduate students as industrial interns

4. Roles and Rights of the Members and Others

4.1 Center members enjoy the rights as outlined in their respective membership agreements and as summarized in Table 1 only for the term of membership after annual fees have been paid. Membership fees are considered “paid” when financial and/or in-kind support has been received by the applicable research Site or the member agreement has been signed with the intention of payment and/or delivery of in-kind support. The rights are based on the level of contribution from membership fees and in-kind cost share as summarized in Table 1.

a. **Membership Term**

The term of membership is defined as a 12-month period starting on the date the Membership agreement is signed. A new member joining the Center only has these rights during their paid term. After this paid term has ended, members can renew their rights for another minimum of one year term by paying the required additional funding. A member that leaves the center will no longer have these rights at the end of the term during which last dues were paid.

4.2 **Membership Application**

A candidate member may apply for Center membership at any time. For any membership application where in-kind cost share is used for all or part of the annual membership fee, the application shall include a proposal delineating how the cost share benefits one or more projects and complements the Center mission and goals. The Center Director will determine the format for this proposal.

4.3 **In-Kind Cost Share Applied to Membership Fees**

- a. When used in fulfillment of annual membership fees, the level of in-kind cost share shall be appropriate for the in-kind work scope required by one or more projects. The IAB chair, the Site Director(s) responsible for these projects and the Center Director shall endorse all requests for new membership and membership renewal in categories that include in-kind cost share.
- b. On occasion, The IAB may consider deviations from the maximum in kind cost share directives in Table 1 in consideration of
- c. The magnitude and relevance of in-kind contributions to one or more projects(s), and
- d. The importance of the associated technologies to the Center, in general.
- e. The benefit to the Center of in-kind cost share shall be reviewed by the IAB on an annual basis.

4.4 **Membership Rates**

- a. Membership Rates are outlined in Table 1 of the bylaws
- b. Members paying multiple years of membership in cash in a lump sum will receive a 5% discount off of the additional years paid. Example: Company chooses to pay for three years of membership (at a rate of \$55,000) in lump sum. They receive 5% off of years 2-3 making their total payment \$159,500.

Table 1: Membership Categories, Roles, Rights and Fees-Effective September 1 2018

Membership Categories and Annual Fees	Voting		IAB Meeting Access		Information Access	
	All Matters Except Project Ranking	Project Ranking	Closed Meetings	Open Center Meetings	Data, Results and Reports	IP Partnering Rights
Full Member minimum of \$55K/year	1 Vote	1 vote for each \$11K excluding in-kind cost share, not to exceed 10	Yes	Yes	Yes	Yes
Full Member, Cost Share minimum of \$55K/year total equivalent value including in-kind cost share at a level not to exceed 50% of the minimum total required	1 Vote	1 vote for each \$11K excluding in-kind cost share, not to exceed 10	Yes	Yes	Yes	Yes
Affiliate Member minimum of \$27.5K/year	0.5 Vote	1 vote for each \$11K excluding in-kind cost share	Yes	Yes	Yes	Yes
Observer \$11K/year	No voting rights	No voting rights	No	Yes	Limited to open meeting discussions	No

*memberships due prior to September 1 2018 are \$50,000 per year, half memberships \$25,000, and there is one project ranking vote per \$10,000

5. Center Advisors and Evaluators

5.1 Industrial Advisory Board (IAB)

The responsibilities of the IAB are as following:

- a. Evaluate the current research thrusts
- b. Suggest new opportunities
- c. Evaluate Center operations
- d. Match center capabilities with unfilled research needs

The IAB Chair and Vice-Chair shall each serve a renewable term of three years, to be elected by the full members of the IAB.

5.2 Thrust Area Leads

Members of the IAB, either full or affiliate, who specialize in a particular Thrust Area may be selected to serve as Thrust Area Leads to provide additional guidance and support to projects, researchers, and students, in that area. Thrust Area Leads will be appointed by the IAB Chair and approved by the Site and Center Directors. The member selected as the Head Thrust Area Lead will serve on the IAB Executive Committee.

5.3 IAB Executive Committee

The IAB Executive Committee shall be comprised of the current IAB Chair and Vice-Chair, and head IAB thrust area leads, or their designate who serves as a lead in the same thrust area. All IAB Executive Committee members must have current memberships with a Site.

5.4 NSF Assessment Coordinator

The coordinator is assigned by the NSF. The evaluator's fee is paid by the lead organization (OSU) out of the NSF funds specifically assigned for such and/or directly paid by NSF. The role of the Evaluator is to gather data by observation and survey of IAB members and faculty so as to provide objective feedback on Center processes and outcomes. This will assist the Center and Site Directors in refining Center operations and ensuring that the needs of all Member organizations are met.

5.5 Academic Advisory Committee

The committee will be made up of key researchers from all academic sites.

6. Operational Vision of Ma²JIC as a Multi-institutional Center

Ma²JIC is comprised of multiple university sites that are loosely coupled and logistically operated together as a single, multi-institutional research center. Each university site must have a healthy, largely independent research program in conjunction with their own members to give them value. Concomitantly, inter-site collaborations are an equally vital component of this Center. These collaborations will be both formal and informal. For example, the nature of the semiannual workshops that are rotated among sites along with multi-institutional members and projects, will help ensure that a true multi-institutional center is reached. Frequent interactions between faculty members and graduate students at different sites will occur via teleconferencing, meetings at professional conferences, trips to visit each other's sites, student exchanges, etc. Within each site, research projects will be structured to provide the appropriate level of personnel and other resources necessary to ensure success. Research

projects will also be structured to meet the graduate thesis and dissertation requirements of its participating students.

7. Organization of the Center

The Center Director will be selected by the lead Academic Site in consultation with NSF and will be responsible for all Center activities.

7.1 Role of the Center Director

To lead, organize, and manage activities among sites and serve as the contact point on issues that span the entire Center. The Center Director also serves as Site Director for the lead institution (OSU) and as faculty member on one or more projects.

7.2 Role of Site Directors

To lead, organize, and manage activities within the site and serve as the contact point on issues that span that entire university site. Each Site Director also serves as a Co-Director of the overall Center and as a faculty member on one or more projects at their site.

7.3 Role of Participating Faculty and/or Project Leaders

To lead, organize, and manage activities within their project and serve as the contact point on issues specific to that project at their home site. Project Leaders will report to the appropriate Site Director, university administrators, and IAB project contact(s).

7.4 Role of Students Assigned to Center Projects

To undertake and complete research tasks assigned by the faculty advisor of the project to which they are assigned, leverage their activities for success in publications, presentations, theses, and dissertations in pursuit of graduation, collaborate and work effectively with other students on the same project, and interact with others at the same site and across sites with related interests and activities.

7.5 Role of Center Administrative Assistant(s)

The administrative assistant will report to the center Director, and other site directors

- a. key functions: administrative tasks and meeting arrangements
- b. assists with the overall administration and performs clerical work
- c. responsible for member communications (including newsletters), invoices and NSF reports
- d. assists with organization and management of semi-annual meetings
- e. website management and other miscellaneous tasks as they arise

7.6 Role of the IAB Chair

- a. Serve as the Chair of the Industry Advisory Board, conducting meetings and holding votes
- b. Communicate directives of the IAB to the Center
- c. Provides input on key decisions for Center direction
- d. Make decisions about project extensions and funding between meetings on already approved and ongoing projects

7.7 Role of the IAB Executive Committee

- a. Serve as representatives of the IAB's interests when ad hoc input is requested
- b. Advocate for Ma²JIC in industry circles to increase awareness of Center work
- c. Make decisions about project extensions and funding between meetings on already approved and ongoing projects

8. Voting Procedures

8.1 Each IAB Member has voting rights outlined in Table 1

- a. Dues must be paid (see 3.1) for a vote to be counted at the time decisions are made.
- b. All full members and affiliates must sign the same membership agreement unless approved by the Center Director and IAB.

8.2 A quorum for any IAB vote is two thirds of the IAB voting members or their proxies.

8.3 Each IAB voting member (or their appointed proxy) will cast votes.

- a. "In person" voting may be called for during IAB meetings by any IAB voting member; if less than a quorum of total IAB voting members are present the vote will be tabled and then called via e-mail within 5 days of the meeting.
- b. E-mail voting may be called for by the IAB Chairperson at any time. A period of 2 weeks will be given to respond to a call for email voting. If no response is received in that time, it will be considered as an abstention. All email votes should be sent to the IAB chair and vice chair or their designee. Results of the voting will be emailed out within 3 days of receiving the votes.

8.4 In general, decisions are made based on the majority of votes cast (>50%). For Bylaws changes or exceptions to the Bylaws, a two thirds majority of the votes cast is required to carry an action.

- a. All motions will be phrased as Yes/No or Option 1/Option 2 questions for voting.
- b. In the event of a tie, the center director will cast the deciding vote.

9. Procedure for Ranking, Funding and Member Support of Projects

Site Director(s) and one or more members will agree to pursue a new project, develop a work scope with associated budget required to fund the project. Proposals for new projects are submitted to the IAB for voting. Funding of approved projects is managed at the Site level by the Site Director. The primary funding source for projects is membership fees.

9.1 New projects are selected by IAB members in accordance with Table 1 and Section 8. A minimum of 5 votes is required to initiate a new project. The Site Director responsible for submitting a project for consideration may require more than the minimum to ensure there is enough support for the project scope and budget at the Site.

9.2 In addition to the requisite votes from the IAB, funds available from membership fees and/or other sources to cover a minimum of one year of funding are required for a project to be initiated or to be continued for another year of activity at academic sites.

9.3 Funding must be credited to projects at the time projects are initiated or to ongoing projects when they are renewed for another year of activity.

9.4 Once funds are allocated to a project, they are fully committed to that project until the funds are expended or a decision is taken by the Site Director to reallocate funds based on agreement with the thrust area leaders and/or the member organizations that are actively mentoring the project.

9.5 Full members will mentor all projects. Each member may focus on one, two or more projects at their discretion.

10. Reports

Project updates will be posted to the center web page during course of the project activity.

- 10.1** Project reports are expected at least once per fiscal year to the Center Manager for inclusion on the website.
- 10.2** Project End Term Status Reports should be posted to active IAB web page before end of the year (July 31).
- 10.3** All administrative issues, concerns or conflicts regarding the activities of research and reporting are the responsibility of the Center Director.
- 10.4** The Center Director shall provide an annual report to all IAB Members and the NSF.

11. Center Meetings

Center meetings will be held twice per calendar year.

- 11.1** January and July are the targeted meeting times. The January meeting will be hosted by the lead institution (OSU) and July meetings will be rotated among the other academic institutions. Meeting sites will be contingent on the ability of each site to host the event and subject to IAB approval of dates and venue.
- 11.2** Each meeting should include an open session and IAB-only closed session. The open session will include an overview of the Center activities and presentations on project activities.
- 11.3** The Center Director, Site Directors, and the IAB Chairperson will establish the agenda and schedule of activities for all Center meetings.
- 11.4** The IAB will be given the opportunity to review research results, select projects, review budgets, and discuss the strategic plan for the Center.
- 11.5** A Member Organization must identify one voting representative for the Center meetings, but others employed by the Member may attend.
- 11.6** The meetings may also include topical symposia based on the recommendations of the Site Director and IAB interest.

12. Procedure for New Industry and Academic Partner

A new (or existing) member may join an existing Academic Site in the Center at any time, provided all related rights are granted when dues are received. IAB approval for new members to join the center is not required.

A candidate Academic Site may submit a proposal to join the Center at any time. This proposal should include details of the site's proposed research thrusts and how they would augment and/or complement the mission and goals of the Center. The Center Director will determine the format for this proposal. This proposal should include letters of intent (for at least 4 memberships) from potential members to fund research at the candidate site if it joins the Center. Once this proposal is submitted and the criteria for member support are met, the other Academic Site Directors and the IAB Chair will be asked to provide

their opinion. Upon unanimous approval by the Site Directors, a formal letter of invitation will be provided to the candidate Academic Site and the IAB will be informed.

13. Methodology for Supporting Graduate Theses and Dissertations for Participating Students

Center projects will be maximally leveraged to support doctoral dissertations and MS theses for its student participants. Although member dues are paid on a yearly basis, it is anticipated that a majority of projects in the Center will contain sufficient breadth and depth so as to support students for multiple years in order to support completion of theses and dissertations

14. Related Research Contracts and Grants

As needs for proprietary research or unique applications may develop, a separate contract or grant may be negotiated between a Member and one or more of the Academic Sites in the Center. Such contracts and grants are handled outside the Center membership agreement and would be expected to have confidentiality, patent, copyright, and financial agreements that are different from center programs.

15. Equipment for Research or Services provided by Member Organizations

Equipment donations from members are highly encouraged and will be publicized within the Center and through the website. In general, members may donate or loan equipment to support the mission of the Center independent of their membership fee. In special cases, equipment or services may be provided lieu of all or a portion of the costs of membership subject to IAB approval.

16. Publication Review Policies and Procedures

These policies are described in the IAB membership agreement (section E). The Academic Sites reserve the right to publish in scientific or engineering journals the results of any research performed within the Center. The IAB must be notified of any intent to publish and the members shall have the opportunity to review any paper or presentation containing results of the research program of the Center prior to publication or presentation. Further, any member shall have the right to request a delay in publication for a period not to exceed ninety (90) days from the date of submission for review. Any request for delay shall be in writing with a justification and shall be submitted within sixty (60) days from the date the proposed publication is submitted for review.

17. Procedure for New Project Solicitation

During annual and mid-year meetings, the new project ideas will be solicited from the faculty and the members. These project ideas will be based on strategic planning discussions that will be conducted at each annual meeting.

18. Non-Disclosure Agreement for Non-Member Meeting Attendees

A non-disclosure agreement must be signed by all non-member guests who will be attending the IAB meetings. This agreement allows non-members to participate in the meeting, but they are not allowed to retain any of the materials distributed at the meeting.

Antonio J. Ramirez - OSU
Center Director

3/28/2019
Date

Steve McCracken - EPRI
IAB Chair

Date