

Notes from Breakout Session

October 18, 2018

AMM Planning Workshop

Zelazo Center - UWM



Q1: Which research themes are most valuable? What should be added? Should any be eliminated?

- Many agreed on proposed themes (Lightweight materials, composites, High-performance structural materials, functional/smart, additive materials).

- Areas of interest included:

Surface engineering. Additive manufacturing (beyond 3D printing). Design for Additive. Resource development for processing and characterization of new materials. Interfacial reactions in multi-functional systems. Accelerated processing – faster method to develop target material properties. Surface science and molecular characterization (molecules on a surface, dissimilar materials, interfacial reactions). Material simulations. Sustainability and recycling, projects that involve entire supply chain. Analysis of waste streams. Cradle to grave analysis (cost and sustainability) for any new material.

- Applied research is probably more important than fundamental. 3D graphene. Scale-up of material synthesis. NDE testing. Surface treatments, joining (dissimilar materials and traditional)

Additional Question: How do we design a process to prioritize these topics?

Advice: Start with your strengths; industry should identify their weaknesses and also have a plan to strengthen those areas that includes AMM.



Q2: Which benefits are most valuable? What should be added? Should any be eliminated?

- Ease of accessibility and single point-of-contact.
- Strong opportunities for industry to connect with a university already exist. AMM should offer value BEYOND what industry can currently get from one institution.
- “Concierge service” – AMM provides advice on contacts and can act as a single point of contact into Wisconsin academic resources.
- Diversity of resources. Idea of a “one-stop shop” for access to resources.
- Access to technology bank. Access to academic + industrial network at the same time.
- Sustainable workforce – talent pipeline
- Integration of RM2N for smaller, targeted projects



Q3: What metrics should be utilized to measure success for the AMM?

- Advice to identify indicators as well as metrics.
- Stream of talent development – student transitions to AMM industrial partners.
- Funding obtained as a spin-off of AMM
- Participation in workforce training activities.
- Number of member companies (growth and sustaining members)
- Funding, speed to sustainability Time to closure for projects.
- License agreements, implementations
- ROI (based on each partners' definitions); cost of traditional research vs. cost of using AMM
- Need “leading indicators” to show the center is winning.
- Acknowledge and address tension between faculty desire to focus on papers and industry to focus on IP and speed.

Q4: What type of projects are most likely to be successful? Which are not?

- Projects must have a critical mass of expertise. Projects must have common interest from broad industry. Reasonable goals.
- Projects that can directly support revenue (easier to sell internally) AND can generate publications (easier to sell to faculty) AND support IP generation (supports AMM).
- Pick projects clearly and establish goals. Academic and industrial people NEED to understand the motivations and needs of both sides. Academics need to understand deliverables (on time, on spec, and success). At the same time, this is R&D and not contractual research so you should expect some projects to fail just as some internal projects in R&D do not win.
- Look at USCAR for a standpoint of how academic/industrial collaboration can work.
- Encourage companies disclose their “grand challenges” to AMM researchers.
- Get the IP aspects defined right away.



Q5: What can AMM do to differentiate itself in the landscape?

- Wisconsin focused. Faculty & industrial strength are unique.
- Ease of access.
- There are too many “centers of excellence”. Is this the wrong term to use. Wisconsin already has metal manufacturers association and advanced manufacturing association. How is this name different enough. (Advice to differentiate name from existing centers and trade associations).
- Suggestion to use flexible IP model as a way to differentiate.



Q6: What role should the state play in the CoE in AMM?

- WEDC could advocate for the state to give a tax credit to companies that participate with the center.
- WEDC can help with marketing and spreading the word to new companies moving to Wisconsin.
- WEDC can help facilitate IP issues – a UW-System-wide NDA for example. (UWMRF is already pursuing this).
- WEDC can support future growth initiatives that expand / leverage AMM initiatives.



Q7: Industry: What are your concerns? How can they be addressed?

- Will the needs of a smaller company be heard? How can a smaller company expect to contribute the same money as a big company? Should center projects or memberships be scaled to the revenue of the industrial participant?
- Industry and academia need to assure fairness in scope of a project to make sure both sides can win.
- Operational complexity – how do we keep this center simple?
- What happens with ideas generated OUTSIDE of the scope of a defined project? Who owns that?
- Transparency in center operations must be maintained so industry has greater confidence in participating.
- Main concerns heard so far from many industrial visits: 1) how will it be managed (it's such a big, multi-campus idea) and 2) what about IP?

Q8: Faculty: What are your concerns? How can they be addressed?

- How well will the various campuses cooperate? Will certain campuses dominate the organization in a way that leads to problems?
- Would AMM facilitate issues between campuses?
- Will AMM hold events for faculty to meet one another such that effective research teams can be built?
- What will be the level of industry involvement in a project? Will researchers be expected to work alone or will they have access to equipment / know-how from industry members? How forthcoming will industry be with background information for projects? Some industry projects force academics to recreate knowledge that a company could have simply shared at the onset.
- It would be helpful for manufacturing to be involved in both design of projects and during projects (since transition from academia to manufacturing is often a barrier).

