Advanced Manufacturing
+ World-Class Education
= Sustainable Communities

Rediscovering, Redefining, and Rebuilding Manufacturing in the Knowledge Economy

CHICAGO MANUFACTURING
RENAISSANCE COUNCIL

For discussion at the March 18, 2009 Advisory Board meeting

Draft Outline of the CMRC's Positions on Education

1. For the United States to have sustainable communities, a strong and large middle class, and a stable society, we must have advanced manufacturing at the core of our economy. This is not just important for manufacturers—this is important for the whole society. Our approach to development stands in contrast to other approaches like those anchored in financial and real estate speculation, which are playing themselves out in the current financial crisis, and those that see a service and retail economy as the dominant sectors with a permanent decline in manufacturing. Our society must be based on a creative and productive manufacturing sector. (See Appendix A: *CMRC Statement on the Economy*)

2. Every other sector depends on the health of manufacturing, including retail, service, finance, construction, tourism, and the public sector. While the US no longer has a competitive advantage in making simple products with low-skilled labor, we have a strong advantage in making high value-added products with high-skilled labor. The CMRC believes that Chicago should become the global leader in manufacturing complex products, consequently realizing the highest possible fusion of public and private interests. Our whole society must refocus around building our advanced manufacturing sector as an urgent priority and economic foundation if we are to remain a sustainable, healthy, and democratic country. Only through an economy based on advanced manufacturing can we really build a large middle class that will have the discretionary income to fuel other segments of our economy. Such a foundation could enable us to effectively address the environmental crisis; to bring an end to the poverty that hits urban communities particularly hard; and to tap into the deep capacity for innovation and creativity held by our residents.

   This is an understanding that must be shared by our city, state, and national leadership.

3. To succeed at preserving and extending our advantage, we must have a world class "Birth through Twenty" (B2Twenty) education system as a foundation for a culture based on life-long learning. Nothing less is adequate or acceptable. This is not about simply doing better than last year or even about being relatively successful in comparison to other parts of the country. We must chart a trajectory to becoming world leaders in education. This requires a radical change in our thinking as the first step in bringing about a radical change in our practice. Not only are we capable of bring about these changes, we must. Building such a system should be a key priority for every leader from every sector of the economy. A mortgage broker, for example, should favor our approach to development because a strong middle class provides a strong market for home

ownership. A retailer should favor our approach because a strong middle class provides a strong market for retail, etc.

4. As described in detail in the 2001 report issued by the Chicago Federation of Labor and the Center for Labor and Community Research, *Creating a Manufacturing Career Path System in Cook County,* publicly funded education in Cook County is still a failing system that falls short of meeting the current needs—much less the future needs—of our manufacturing sector and of our residents who are eager for meaningful and secure careers.

5. The entire education system (B2Twenty) must be overhauled and expanded.

   A. We must provide effective education to new parents on how to raise healthy children in stimulating, positive environments that prepare them for a lifetime of learning.

   B. We need a robust and well-funded early childhood education system to guarantee a strong start for our children.

   C. Our elementary and secondary school systems must:

      1) Introduce students to careers in all aspects of manufacturing, including white-collar professions such as management and ownership; (See Appendix B: Career Paths in Manufacturing at APA)

      2) Provide children with intensive formative and summative assessments during school in order to ensure that students are learning the essential competencies in mathematics, English, reading, technology, critical thinking, and history/economics that will prepare them to become the next generation of leaders in manufacturing. A degree or diploma is necessary but not sufficient; proven competencies are required;

      3) Prepare students for post-secondary and advanced education: a prerequisite for careers in advanced manufacturing;

      4) Provide nationally recognized industry credentials in addition to a high school diploma;

      5) Offer work opportunities in manufacturing through internships and summer jobs;

      6) Link the education of students to the development of their own communities; and

7) Encourage values that build and sustain our society.

D. We need a national system of skill standards and certifications for all hourly and production jobs. The new National Association of Manufacturers (NAM)-Endorsed Skills Certification System is a great step in the right direction.

E. Post-secondary education must:

1) Teach students the competencies they need in order to assume leadership positions in all aspects of manufacturing;

2) Link students with nationally-recognized skill standards and credentialing systems;

3) Seek active advice and involvement by manufacturers and associations;

4) Actively market careers in manufacturing and challenge dated perceptions among prospective students, parents, and guidance counselors; and

5) Seek effective and articulated relations with schools upstream and downstream.

6. In an era of school reform, we must ensure that:

A. Opportunities for new approaches to education are encouraged and supported in order to create high quality models;

B. Persistent problems of bureaucracy and lack of accountability in the public system are candidly and forcefully confronted by our political and legislative leadership;

C. The social partnership of business, labor, community, government, and educators is preserved in public education. The trend of blaming teachers' unions for the crisis in education must be opposed;

D. Teachers' unions strive to be leaders in creating new, effective models of education and are aware of their fundamental interest in building a society anchored in advanced manufacturing. Teachers' unions have the potential to play a major role in the rebuilding and development of our "knowledge economy"; and

E. Career focused education is employer-driven and influenced by a profound understanding of exactly what competencies and skills are necessary to succeed in various career paths.

7. We need full public funding for quality public education.

A. The principal problem with today's educational system is performance, not funding. Increased funding for education must be linked to increased performance;

B. Illinois must address the profound inequalities inherent in our property tax-driven approach to school funding. Quality education is a right for all children, not just for the financially privileged.

C. More so than ever before, the current and future interests of all manufacturers are intimately linked to the interests of all educators, and vice versa. Manufacturers and educators must be profoundly linked in a common agenda that recognizes their mutual dependence.

8. We must build a broad, non-partisan coalition uniting manufacturers, educators, government, community, and labor in support of advanced manufacturing.

Summary of CMRC's Educational Initiatives

1. **Educational and Skill Standards Committees:** Both committees have provided a forum for top educational leaders to meet with manufacturers as well as CMRC staff in order to initiate programs to improve our education system.

2. **Austin Polytech (www.austinpolytech.com):** This small, manufacturing-focused public high school, which opened in the fall of 2007 after two years of planning and development, was the CMRC's first educational initiative. Austin Polytech is a Chicago Public Schools Performance School represented by the Chicago Teachers' Union. Forty-nine local manufacturing companies are partners with the school. Students will be prepared for college and will graduate with at least two NIMS credentials as well as work experience. The school's mission links it to the development of the community. Austin Polytech was cited by President Obama as a national model that should be replicated around the country. The school has been featured in the *Wall Street Journal*; the *American Prospect*; the IMA journal, *The Illinois Manufacturer*; and various trade association publications. APA was one of the sites for a program launching the Machinists' Union's national America's Edge campaign. Austin Polytech is well-known for its strengths. It also has weaknesses in terms of student performance and motivation, partner participation and support, the ongoing impact of CPS culture, etc.—expected challenges in developing a new type of school in the harshest of environments. We are now focused on creating a framework for a full evaluation of all aspects of the school. We are also building the Local School Council, which includes Joan Wrenn of Hudson Precision and Bill Vogel, former president of DeCardy Diecasting.

3. **Center for Polytechnical Education (CPE):** This not-for-profit corporation formed in order to establish, operate, and assist schools similar to Austin Polytech. CPE's national board of directors includes representatives from manufacturing associations, teachers' unions, and educators. In partnership with Chicago LEADS and the Mayor's Office, CPE successfully launched the Chicago Academy for Advanced Technology (www.chicagotechacademy.org), which will open in September 2009. Though our work creating Austin Polytech and CAAT, we have defined key characteristics of a new model in education, which is summarized in Appendix C: The CPE Educational Model. Plans for replication are underway in two other Chicago communities, and educators in other states have also expressed interest in our model.

4. **Promotion of Skills Standards and Credentialing:** With support from the Mayor's Office of Workforce Development, CMRC initiated a survey of manufacturers on the value of skill standards such as NIMS. We also conducted an assessment of the use of skills standards in

Chicago Public Schools, and developed a plan for their promotion. These initiatives led to a significant breakthrough in the form of increased support for the use of nationally recognized industry credentials from the City Colleges of Chicago and Chicago Public Schools.

5. **Community Colleges:**

A. In 2006, we initiated a substantial evaluation of the City Colleges of Chicago's programs in relation to manufacturing. We found significant problems and shortcomings in those programs, and proposed a joint project to revitalize and restructure them. An ongoing partnership with CCC developed from this initiative, which has led to City Colleges to seek NIMS accreditation, new equipment, new instructors, and a commitment to step up their marketing. CCC leadership meets with the CMRC on a regular basis.

B. At the request of the College of DuPage, we completed an initial assessment of their manufacturing programs.

C. The West Suburban Chapter of the CMRC organized a very successful conference this year on Community Colleges and Manufacturing, which was attended by over 140 people, including manufacturers, educators, associations and elected officials. The event was the beginning of a state-wide policy initiative on post-secondary education.

6. **Independent Training Initiatives:** The CMRC has developed a business plan for the creation of a training center utilizing the new Austin Polytech machine shop to train community residents and parents of Austin Polytech students. This center will utilize MSSC and NIMS credentialing standards (see Appendix D: Concept for West Side Training Center).

Recommendations for the CMRC and the CMRC Education Committee

1. Determine the anticipated demand of manufacturers in the region for skilled and credentialed employees over the next 10 years as the foundation for setting goals for the various parts of our regional education system in meeting that demand.

2. Immediately define the particular ways that the Chicago region can utilize Federal Stimulus Funds and other federal resources to strengthen our advanced manufacturing sector, and work closely with the key agencies, companies, and institutions to secure and manage these dollars.

3. Close evaluation of our schools, including Austin Polytech and CAAT, to ensure high performance. As early efforts in establishing a new model of education, these schools will have their distinct strengths and weaknesses. The CMRC must have a full understanding of these strengths and weaknesses; provide timely assistance; and learn from the schools' experiences as the basis for additional replication.

4. Provide oversight for our initiatives in community colleges. In particular and in this next year, we must ensure that City Colleges of Chicago:

   A. Sustains its joint planning and discussion with CMRC leadership in the effort to establish CCC as a world class center for training and education in manufacturing;

   B. Develop and implement an aggressive marketing plan to recruit and educate sufficient numbers of students to meet the employment demands of area manufacturing companies;

   C. Succeed in Daley and Wright College securing NIMS accreditation; and

   D. Insures that CCC manufacturing education staff are assessed by CMRC as a step to insure effective education programs at Daley and Wright colleges.

5. Establish linkages with colleges and universities to promote careers in manufacturing; build a pipeline for teachers, principals and administrators for our schools; and promote industrial research and innovation.

6. Contribute to the state and national policy agenda on education, including support for replication of the CMRC and our educational models and approach as well as other initiatives advanced by our partners. Such initiatives could include:

A. State policy supporting CMRC post- secondary policy recommendations (see Appendix E: Post-Secondary Education Policy Recommendations);

B. Support for new pilot projects on skill standards, such as the Manufacturing Institute's new initiative.

C. Replication of the CPE Education Model of education in secondary schools linked to manufacturing around the country with the Manufacturing Institute, NIMS, and others;

D. Early childhood education initiatives advanced by America's Edge.

Appendices

Appendix A: CMRC Statement on the Economy

Appendix B: Career Paths in Manufacturing at APA

Appendix C: CPE Educational Model

Appendix D: West Side Machining Center Proposal

Appendix E: Report on Community Colleges and Manufacturing Conference

Appendix F: Executive Summary of *Creating a Manufacturing Career Path System in Cook County*