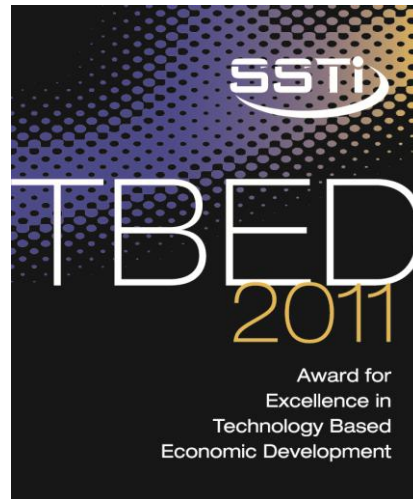# Podcast Interview

Nabil Nasr, Director, Center for Integrated Manufacturing Studies, Rochester Institute of Technology
Interviewed by: Rob Ksiazkiewicz, SSTI

2011 Excellence in TBED Award Winner:
Improving Competitiveness of Existing Industries

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Mr. Ksiazkiewicz:	Hello this is Rob Ksiazkiewicz with SSTI, and this is the final Podcast of 2012 for SSTI. Wrapping up our interviews with the 2011 Excellence in TBED Award Winners, I am speaking today with Nabil Nasr, Director of the Center for Integrated Manufacturing Studies at the Rochester Institute of Technology. The Center for Integrated Studies, or CIMS, was the 2011 winner of SSTI's Excellence in TBED Awards in the category Improving Competitiveness of Existing Industries. CIMS was recognized for its approach in adapting its experience to meet the evolving needs of manufacturers by focusing on the regions strongest industry clusters. Hello, Dr. Nasr. Thanks for being here and congratulations on the award.
Dr. Nasr:	Thank you very much. I'm glad to be with you here.
Mr. Ksiazkiewicz:	Let's start out with – could you give us a brief history and background of the Center for Integrated Manufacturing Studies, and how it fits into the Rochester Institute of Technology?
Dr. Nasr:	Yes, sure. The Center for Integrated Manufacturing Studies (CIMS), started at RIT as concept in 1992, and since has evolved in terms of the activities we're involved in, and has grown in terms of also the size and the scope. The organization started as part of the university in 1992 as a technology development, technology transfer organization. The focus over the early part of our history was on manufacturing, and soon after we zoomed in on sustainable manufacturing and sustainable mobility, re-manufacturing, and recycling and pollution prevention. Those are the areas that we have actually focused a lot of our activities on. We use applied research approach to working with industry and ensure that there is a strong element of dissemination in the technology transfer of what we do.
Mr. Ksiazkiewicz:	What are the services provided by the center? Typically what do you do with your companies, and with the researchers you work with?
Dr. Nasr:	One of the approaches that we use is actually we build a strong partnership with our research sponsors and we typically involve with our sponsors over a very long period of time, many years obviously the work will change over time, but typically there is a lot of partnering with our sponsors. We do applied research with our sponsors; focus primarily on making sure that we are targeting areas where we can get tangible

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results, where we can make a difference, and where we have a strong technology niche. We also do analysis, and in many cases we do white papers, we do studies that can be for our state or the federal government related to certain areas, and development of technology roadmap in areas related to transportation or aspect of energy systems. We also do a lot of independent validation from product compliance with sustainability principals for example to more reliability engineering and so on. We also have a technology incubator that we also run as part of our operation that actually focuses on the technology side of startup companies, and look for some innovative concept that needs that kind of support. We have been doing that for close to ten years now.

Mr. Ksiazkiewicz: One of the things that our judges were really interested in, and you'd mentioned it a lot with the operations, the activities and services you provide. They believe that CIMS is a great example of a strong operational model. Could you give us a little insight into the model?

Dr. Nasr: I think we do also internally think that our official model has helped us tremendously over the years. We are part of the university, and we actually have an academic organization that we helped start offering academic programs in sustainability and sustainable architecture. The organization that does applied research CIMS is autonomous. All of our funding comes from external funding. We have sizeable programs that we run, and that autonomous model allows us to really move fast. Our processes are very, very much aligned with the approaches that are used in delivery. We're very sensitive to the timing that we use from beginning of a project, writing a proposal, to all the way to the delivery of the project itself. There is a lot of flexibility in our approaches to deal with different types of projects, from ones that actually require significant technical assistance, but very short term period of time, to ones that are a much longer period of time that require a different approaches. That autonomous model, I think has helped us tremendously. We're also very focused, so we don't deviate very much from our key areas. We are also very connected with our sponsors. We're very much connected with the sponsor from understanding their technology challenges, to serving on technical boards with different industry sectors that allow us to have an insight into some of the challenges and allow us to have also good understanding of what is needed. I think that is really what has helped us tremendously over the years to continue to do our work, and be effective at what we do.

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Mr. Ksiazkiewicz: You had mentioned the fact that almost all of your funding is external. Could you talk a little bit about your funding sources, because I know a lot of our members are finding that funding is becoming difficult, and moving external is going to be a necessity in the future?

Dr. Nasr: Actually as part of a university I think sometimes it can also present some challenges in actually working with industry. I think that maybe we're too theoretical or something like that. Simply all of our funding, 100% is external funding. We're very diversified so we work with the National Science Foundation, we work with the Department of Commerce, we work with the Department of Energy, we work with NIST, we work with all different government agencies dealing with large research programs. But also we have significant funding that comes from industry. We work with different industry sectors and sometimes in one-on-one project is product specific to one company. We also do a lot of work where we bring some exciting idea and assemble basically a group of companies that have interest in this idea in a pre-competitive research.

We also have some international projects where we do some collaboration. We have currently a project for example with Ohio University and Singapore. We collaborate in this project, and we also get involved with some external government entities overseas that are interested in sustainability and interested in helping some of their national labs for example to get up to speed in this area. Basically very diversified funding sources.

Mr. Ksiazkiewicz: Could you talk a little bit about the process on how the center responds to the demands of small and medium size manufacturers in your area?

Dr. Nasr: The small and medium size companies are always of need of help, but sometimes it is not very easy to structure very good programs to support them. However, the more connected we are with the industry groups, I think the easier it is to actually structure strong programs that can be of significant value. We participate in a lot of technical committees. We participate in a lot of work with the industry clusters to really be at the forefront of understanding some of the challenges and understanding what areas of work that might be beneficial. Sometimes also there is a huge issue related, even if they have the realization of what's needed and very clear on that, that the money is not always there. We actually work with them and actually also identify funding opportunities that we can

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work with them on to be able to secure funding for the concept that we are developing with them.

Just recently, we won a program to help one of our clusters funded by three government agencies close to $1.5 million and we have many partners that are working with us in this area. It's pretty exciting program to see how we can actually help from technology development to some of the training required for the workers in these companies that will be provided by a community college that is geared and able to do this kind of training for employees. The work required basically a number of initiatives that we will provide a good part of it, but our partners will provide the rest.

Mr. Ksiazkiewicz: Now that we see that you're committed to a lot of external sources, and your partners are in industry, so they're obviously asking for metrics and proof of results. Could you talk a little bit about the metrics your organization tracks? How do you get the information from the companies that you work with? How do you publicize these to your shareholders that want to see the results that the program has put out over those years?

Dr. Nasr: Metrics is a tough issue, especially with some programs that only look at some metrics, but not necessarily comprehensive ones. Many of our programs, the funding source basically would ask for specific metrics to report on at the end of the program. Actually one of our funding sources requires us to actually continue to look at the value of the work and its long term impact for up to five years, which is very unique. Basically we capture the metrics that we define as comprehensive enough for us in all of our work, and typically once we collect this data we're able to satisfy the metrics that are required by our sponsors. In some cases, the sponsor is only looking for one thing, or a couple of things; not necessarily a comprehensive metric.

So we have our own process of reaching out to the companies and the organizations that we work with to make sure that we get our reports on the project and its impact. We actually require before we start working with companies, we ask them to make sure that they are able to report to us on the data related to the project work that we do with them. We have been doing this for many years, so it's been a learning process to see how effectively we can do that. We have been able to get some reliable data from our sponsors over the years. As I've said, many, many

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funding agencies would only look for only a sub-set of the metric that we collect, not necessarily the whole thing but for our own purposes, we collect the comprehensive metrics to see how well we did with the project that we conducted.

Mr. Ksiazkiewicz: Finally, I think we have time for one wrap-up question. What lessons could you give to another organization that would be looking to build a program or a take from your model and implement it in their own type of CIMS-style institute?

Dr. Nasr: I think the lessons learned from our experience I think is to focus. We have to have significant depth to be able to help organizations in the area where we have that depth. We have to know more about the companies that are coming to us in this specific area to be able to help them, and to be able to show them value. Then from there, the expansion can go on as over time as basically the new areas will emerge. The depth, the connectivity with the application is not enough to be at the cutting edge if we are unable to do the technology transfer and bridge this technology to application. Typically, especially with a small to medium size companies, we can't make the project successful unless we're able to do that. The bottom line for us is the value to the sponsor, the ability for us to actually go there, and to be able to relate to their problem, and be able to leave them with more of a tangible impact.

Diversification of funding sources also has been a big issue for us. To be able to work with large companies, small to medium size companies, work with the government agencies research foundations. Diversification has been very critical for us over time to ensure that we continue our work. I think lastly, it's the genuine interest to make sure that we are doing the right thing for the sponsor, once we actually try to do the right thing and put ourselves in their shoes in terms of what's important to them, we become also successful.

Mr. Ksiazkiewicz: If the listeners would like to learn more information about the Center for Integrated Manufacturing Studies they can visit the website at www.rit.edu. For more information about the Awards Program please visit SSTI's website at www.sstiawards.org.