Approved by the Regents
May 17, 2012

PROMOTION RECOMMENDATION
The University of Michigan
Stephen M. Ross School of Business

Amitabh Sinha, assistant professor of business, Stephen M. Ross School of Business, is recommended for promotion to associate professor of operations and management science, with tenure, Stephen M. Ross School of Business.

Academic Degrees

PhD	2004	Algorithms, Combinatorics, and Optimization, Carnegie Mellon University, Tepper School of Business
MS	1999	Mathematics and Computer Applications, Indian Institute of Technology, Delhi

Professional Record:

2004-Present	University of Michigan, Stephen M. Ross School of Business Assistant Professor of Business

Summary of Evaluation:
Teaching: Professor Sinha's teaching at the Ross School has been excellent. He has taught our BBA and MBA core statistics classes obtaining average teaching evaluations of 4.78 and 4.77. Colleagues in other schools are surprised when I tell them that statistics is among the more popular core classes at the Ross School. This is no doubt due to the efforts of Professor Sinha who not only delivers the material in a very engaging way but continuously works on developing new relevant examples that will make the material come to life for the students.

When we were developing the MSCM program, Professor Sinha was the only untenured faculty member who volunteered to develop a new course for the program. This course titled Logistics (OMS 621) is very well received by the students and Professor Sinha typically obtains course evaluations of 4.7 or 4.8. He has also contributed to curriculum development by writing a case study on reengineering an international supply chain based on his Tauber project with Grainger; the case is now published through Globalens. Finally, when we developed the MSCM program, our aim was to make the courses that were required for the MSCM students to be also attractive for the broader Ross population. Professor Sinha has been successful in attracting a significant number of MBA and other students to his class achieving very good enrollments.

Research: Professor Sinha's initial work was mostly on approximation algorithms for supply chain networks. This is an important area as real life supply chain networks are too complex to be analyzed using exact solutions. His initial work in this area was published in top journals such as *Operations Research, Mathematical Programming* and *Mathematics of Operations Research* and contributed to our understanding of these problems in multiple ways. First, his Operations Research paper considered approximation algorithms for the integrated problem of locating facilities as well as designing a network. In the past, these problems were considered separately and the joint optimization of these decisions can lead to significant savings. Second, most of the literature had assumed completely deterministic problems. Professor Sinha's work in *Mathematics of Operations Research* is one of the first to develop algorithms for stochastic problems.

We also see great potential for Professor Sinha to become a broader scholar in business. In fact, since he came to Michigan, he has taken advantage of our group's links to practice through the Tauber Institute and other venues to broaden the range of problems that he works on. For example, in two papers with a

doctoral student co-advised with Professor Ravi Anupindi, he develops a way to optimize procurement, processing and trading decisions of a firm in the agricultural commodity space and also develops better ways to manage risks for the company. His Tauber project with Honeywell on truckload transport auctions led to an NSF grant and a paper in *Transportation Science*. He is currently working on papers that have been motivated by Tauber engagements at Cisco and Target. Our group aims to publish papers in top journals that are motivated by actual problems in practice and also make theoretical contributions. In a very short time, Professor Sinha has succeeded in doing that. His publication record includes many papers accepted in top general readership and field journals of OM such as *Operations Research, Management Science, Mathematics of Operations Research,* and *Math Programming*. More importantly, his work is well recognized and appreciated by top scholars in our field.

Recent and Significant Publications:

S. Devalkar, R. Anupindi and A. Sinha, Dynamic risk management of commodity operations: Model and analysis, 2011. (working paper)

A.Gupta, M. Pal, R. Ravi and A. Sinha, Sampling and cost-sharing: Approximation algorithms for stochastic optimization problems, forthcoming in *SIAM Journal on Computing*, accepted 2011.

W. Lovejoy and A. Sinha, Efficient structures for innovative social networks, *Management Science*, 56(7):1127-1145, 2010.

R. Chen, S. AhmadBeygi, D. Beil, A. Cohn and A. Sinha, Solving truckload procurement auctions over an exponential number of bundles, *Transportation Science*, 43(4):493-510, 2009.

A. Gupta, R. Ravi and A. Sinha, LP rounding approximation algorithms for stochastic network design, *Mathematics of Operations Research*, 32(2):345-364, 2007.

Service: Professor Sinha always thinks of the broader good of the group. Last year, when another faculty member in our group had to take a leave of absence, Professor Sinha was very gracious in stepping up at the last minute to teach half of the class (OMS 618) as well as a bootcamp module for the MSCM program. Similarly, when our group was organizing the MSOM conference in Ann Arbor last year, Professor Sinha and another colleague took the very difficult role of managing the program for the conference. He also attended every conference committee meeting and contributed in every possible way. It is rather unique to see such selfless service to the group and broader profession from an untenured faculty member.

External Reviewers:

Reviewer A: "Overall, I am quite impressed with Dr. Sinha and his potential for future contributions in operations management and consider him an excellent candidate for promotion and tenure. His work exhibits both strong technical skill and an increasingly sharp awareness of practical issues that place him among the leading [junior] researchers in operations management. …I imagine that Dr. Sinha could build a case for tenure and a full professor appointment here in a few years. At that point, I may again try to convince my colleagues to pursue him."

Reviewer B: "Overall, I believe that Professor Sinha has developed an impressive research portfolio that contains high quality papers. His research makes both computational and analytical contributions to a wide range of problems that are managerially relevant. The research has been well received and has been published in some of our best journals. This is a strong candidate with a strong research record. I predict that he will continue to be productive and make contributions to the field. Thus I believe that he is deserving of tenure."

Reviewer C: "...he is obviously a very talented and productive scholar. It is very impressive that he could accumulate such a strong record of publication in only seven years. ...I am impressed by the depth of technical training and skill that Professor Sinha demonstrates. It is relatively unusual to find a junior faculty member who has both the rich technical training and the interest in engaging with practical problems in industry that Professor Sinha has demonstrated. I have no doubt that his record would be above the bar for tenure at... I have no hesitation in recommending him for promotion to Associate Professor with tenure at the Ross School of Business."

Reviewer D: "The work of Amitabh and his advisor R. Ravi...are now the classic references in this area that anyone embarking on a research in this area has to read. Very few researchers at this stage of their career can boast of such an achievement! ...I believe that Amitabh has been a good hire for Ross. In my opinion, he will continue to grow as a researcher and will become quite an asset for the Ross Business School."

Reviewer E: "His work is careful and methodical...all represent good contributions to operations research. His teaching evaluations across all courses suggests that he is an excellent teacher... ...the paper 'Solving Truckload Procurement Auctions.'...is an excellent contribution to theory that has the potential to impact practice. He is certainly a researcher who can make specific...contributions to theory, while being effective in the classroom."

Reviewer F: "...I am impressed by the overall depth and rigor of his scholarly work... Professor Sinha's research...has been diverse and influential. His work...is meticulous and clever, and the papers describing this work are clear and well written. I'm particularly impressed by the breadth of Professor Sinha's other work. Overall, Professor Sinha's work has been original and creative, and his most recent work certainly suggests that he will continue to be a productive and creative researcher in the future... ...Professor Sinha is a talented researcher who brings an interesting perspective to operations management research community, and his work is deep and interesting. If he were up for tenure at my institution, I would support his case, and I believe he is deserving of tenure at your institution."

Reviewer G: "Overall the models and methods Amitabh is studying have theoretical sophistication and potential practical relevance. I would like to note that the quality of some of the journals he publishes is top notch and not easy to publish to at all. ...it is important to note that Amitabh's research has received an NSF award. This is an indication that the community values his work. ...as one or two projects only get typically funded...receiving an NSF award is an accomplishment. On a personal basis, Amitabh is a nice, smart, and likeable person. I am sure he must be a good colleague to have. In addition these qualities are also important for a good teacher as well as an advisor of students. Overall I support Professor Sinha's tenure case..."

Reviewer H: "The work of Amitabh is the first successful attempt to close the gap between what practitioners need and what algorithms can do. This is a beautiful piece of mathematics for an important supply chain problem. Dr. Amitabh Sinha has been very productive with sixteen journal publications and in almost all cases his work was published in some of the most prestigious journals in the field. The work is extremely technical and focused on important and challenging problems. I know of very few [junior] faculty who have done such deep mathematical analysis. Thus, I strongly support Dr. Sinha for tenure in your school."

Reviewer I: "I note that by the obvious and convenient measure of teaching effectiveness he does very well. On the service front, I would expect him to be a good citizen. I know that as a referee he provided informed and timely reports. Turning to research, the quantity and average quality of the outlets in which they appear are high... A cursory inspection of citation counts for his papers puts him well above many of his cohorts."

Summary of Recommendation:
Professor Sinha is one of the best scholars working on the design, analysis and optimization of supply chain networks. He is also an excellent teacher and has contributed well beyond expectations in service. We believe the case for his tenure and promotion has clearly met our standards. With this in mind, the Executive Committee and I strongly recommend Amitabh Sinha for promotion to associate professor of operations and management science, with tenure, Stephen M. Ross School of Business.

Alison Davis-Blake

Alison Davis-Blake
Edward J. Frey Dean of Business
Stephen M. Ross School of Business

May 2012