

PROMOTION RECOMMENDATION  
The University of Michigan  
College of Engineering  
Department of Naval Architecture and Marine Engineering

David J. Singer, assistant professor of naval architecture and marine engineering, Department of Naval Architecture and Marine Engineering, College of Engineering, is recommended for promotion to associate professor of naval architecture and marine engineering, with tenure, Department of Naval Architecture and Marine Engineering, College of Engineering.

Academic Degrees:

Ph.D.	2003	University of Michigan, Naval Architecture and Marine Engineering, Ann Arbor
M.S.E.	2001	University of Michigan, Industrial and Operations Engineering, Ann Arbor
M.Eng.	1997	University of Michigan, Concurrent Marine Design, Ann Arbor
B.S.E.	1995	University of Michigan, Naval Architecture and Marine Engineering, Ann Arbor

Professional Record:

2010 – present	Assistant Professor, Department of Naval Architecture and Marine Engineering, University of Michigan
2010 – 2015	Co-Director, Naval Engineering Education Center
2008 – present	Director, Advanced Naval Concepts Research Laboratory
2006 – present	Director of the NAVSEA Ship Production Science Program
2006 – 2010	Assistant Research Scientist, Department of Naval Architecture and Marine Engineering, University of Michigan
2006 – 2010	Adjunct Assistant Professor, Department of Naval Architecture and Marine Engineering, University of Michigan

Summary of Evaluation:

Teaching: Professor Singer has had the primary responsibility for teaching Marine Systems Production and Manufacturing. He has completely revised them, to the extent that these are new courses, NA260 - Marine Systems Manufacturing, and NA562 - Marine Systems Production, Business Strategy, and Operations Research. He has graduated nine Ph.D. students as chair and one as co-chair. He is the chair for additional four Ph.D. students in progress. Professor Singer is a dedicated teacher with a strong interest in each student's technical and professional growth and development. This statement is supported by the comments within the evaluation letters received from students. As a testament to the appreciation that students have for him, he has received the Outstanding Faculty Member in Naval Architecture and Marine Engineering award three times from the Quarterdeck Society (Naval Architecture Student Honor Society).

Research: Professor Singer's research is in the area of Naval ship and Naval system design. His research on set-based design of Naval ships (SBD) has been adopted by the U.S. Navy and it has been applied in the Ship-to-Shore Connector program. He has secured significant external support for his research program, attracting over \$8 million in research. Sources of funding include the ONR, NAVSEA, and the Naval Engineering Education Center. His work has been recognized with various awards, including the Office of Naval Research Young Investigator Award and the American Society of Naval Engineers Solberg award (awarded to the nominee who has made the most

significant contribution to naval engineering through personal research during the three year period ending in the year of the award). His CV lists over 30 articles in refereed journals, and over 50 refereed conference proceedings. Based on his track record and the current level of research activity, he is expected to continue to excel in the future.

#### Recent and Significant Publications:

- Morgan C. Parker and David J. Singer, "Analyzing the Dynamic Behavior of Marine Design Tools Using Network Theory," *Ocean Engineering*, Volume 106, Pages 227-237, September 2015.
- Knight, J.T. and Singer, D.J., "Prospect Theory-based Real Options Analysis for Non-Commercial Assets," *ASME journal of Risk and Uncertainty in Engineering Systems, Part B. Mechanical Engineering*, Volume 1, March 2015.
- Nathan D. Niese and David J. Singer, "Assessing Changeability Under Uncertain Exogenous Disturbance," *Research in Engineering Design*, Volume 25, Issue 3, Pages 241-258, July 2014.
- Dong, F., Van Oyen, M. P. and Singer, D. J., "Dynamic Control of "N" Queueing Network with Application to Shipbuilding," *International Journal of Production Research*, Volume 52, Issue 4, Pages 967-984, February 2014.
- McKenney, T. A., Gray, A. W., Madrid, C. and Singer, D.J., "The Use of a Fuzzy Logic Set-Based Design Tool to Evaluate Varying Complexities of Late-Stage Design Changes," *Transactions of the Royal Institution of Naval Architects Part A: International Journal of Maritime Engineering*, Volume 154, Pages 179-189, December 2012.

Service: Professor Singer has achieved national and international visibility based in his significant service activities. He is currently the editor of the *Journal of Ship Production and Design*; he served as co-director of the Naval Engineering Education Center comprised of 27 Colleges and Universities; he served as faculty advisor to the Concurrent Marine Design Program; he serves as a faculty advisor to the Quarterdeck Honor Student Society; he served in the International Marine Design Conference committee; and he participates in several professional society committees. Professor Singer was elected a fellow of SNAME and he received the Distinguished Service Award of SNAME.

#### External Reviewers:

Reviewer A: "I would assess Prof. Singer's scholarly visibility in complex ship design to be at the highest level with regard to developing methods and tools, and their demonstration . . . he is highly regarded both by leading researchers and by practitioners in the field . . . I consider that he should be both tenured and a full professor at a major university."

Reviewer B: "The candidate has published strongly in the USA, with both Journal papers and presentations to national conferences. His high standing amongst his professional and academic peers is reflected in his role as Editor of the *Journal of Ship Production and Design* . . . This candidate is performing at an extremely high level across the range of activities expected of a senior academic."

Reviewer C: "...I would rate Dr. Singer in the very highest group (top 1%) of candidates considered and selected for tenure and promotion to associate professor in our field . . . His promise for future professional growth is outstanding."

Reviewer D: "The level of scholarly work is well above the average of the level of his peers who are being considered for promotion to associate professor with tenure . . . It is very obvious that he is an excellent mentor . . . I recommend him highly to be promoted to an Associate Professor with tenure."

Reviewer E: "...I strongly endorse him for tenure and promotion to Associate Professor . . . graduate students he supervised and mentored have made and continue to make significant contributions to many of the Navy's ship design projects ... These graduates are helping to fulfill NAVSEA's strategic goal to build an affordable future fleet. Dr. Singer's ongoing work in improving ship design tools and methods will undoubtedly influence many more ship designs in the future."

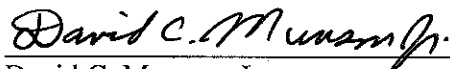
Reviewer F: "His scholarly visibility is high. He is often being present with a strong team at major conferences and meetings both in the US, in Europe and in South East Asia . . . Professor Singer meets the requirements for being considered for tenure at a research university, and, based on his career track until now and his current standing, shows a substantial promise for future contributions within his field."

Reviewer G: "...I believe Prof. Singer embodies and exemplifies all the qualities that an Associate Professor with tenure at University of Michigan should possess. I am sure that his drive and enthusiasm will continue to bring great accolades to him and the University as a whole."

Reviewer H: "His research productivity is excellent and in my opinion, well above the rank of Assistant Professor. The same is true for his funding, publications, graduated PhDs, scholarly visibility at the national and international level as well as professional stature in the Naval Architecture and Marine Engineering community (US Navy and industry)."

Reviewer I: "After fully reviewing his record and his publications, I was even more impressed with his accomplishments. In my opinion, he would be promoted with tenure at [my institution] . . . I find his record in many ways consistent with that of a successful candidate for promotion to Full Professor."

Summary of Recommendation: Professor Singer has established a highly successful record of scholarly research, teaching, and service at the University of Michigan. It is with the support of the College of Engineering Executive Committee that I recommend David J. Singer for promotion to associate professor of naval architecture and marine engineering, with tenure, Department of Naval Architecture and Marine Engineering, College of Engineering.



David C. Munson, Jr.  
Robert J. Vlasic Dean of Engineering  
College of Engineering

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