CURRICULUM VITAE

TUCKER J. MARION

Education:

Ph.D.	2007	The Pennsylvania State University The Harold and Inge Marcus Department of Industrial and Manufacturing Engineering Ph.D. in Industrial Engineering, Manufacturing Systems Major Field: New Product Development Processes Dissertation advisor: Dr. Timothy W. Simpson
M.S.	2002	University of Pennsylvania Penn Engineering and the Wharton School M.S. in Technology Management
B.S.	1996	Bucknell University College of Engineering B.S. Mechanical Engineering

Academic Positions:

2007 – Present	Associate Professor of Entrepreneurship & Innovation, D'Amore-McKim School of Business (DMSB), Northeastern University, Boston, MA (2007 - present). Joint Appointment, Department of Mechanical & Industrial Engineering, College of Engineering. Tenured in 2013.
	DMSB Partnership Innovation Director, (2021 – present)
	Master's in Management X Platform Program Director (2021 – present)
	NASA Convergent Aeronautics Solutions Visiting Scholar, (2020-2021)
	Group (Department) Chair, Academic Programs and Non-Tenured Faculty, Entrepreneurship & Innovation Group (2017 – 2020).
	Visiting Scholar, TU Delft, (2014)
	Faculty Director, Master of Science in Innovation programs, High Technology MBA (2013 – 2022).

Industry Positions:

2022 – Present	Co-founder, Board member, Ada IQ, Inc. (Generative AI design platform, equity financed)

2004 – Present	Founder and Managing Partner, FlashPoint Development, Inc. (Product design and engineering consultancy, equity financed)
2000 – 2004	Co-founder and Chief Development Officer, Innovation Factory, Inc. (Consumer products, equity financed)
1996 – 2003	Lead Engineer, Project Manager for Forward Model Products, Operations Team Leader, Quality Analyst, Visteon Corporation and Ford Motor Company.

Research Interests:

My interdisciplinary research is centered on the new product development (NPD) and engineering design process. Specifically, I research on factors than can influence design efficiency and efficacy, which include implementing startup approaches to design, digital design adoption, and AI integration. Published in engineering, management, and practitioner journals. 38 peer and editorial reviewed publications, Google Scholar *h-index* = 27, *i-10-index* = 41 as of April 2025.

Books:

1. Marion, T. and Fixson, S. 2018. *The Innovation Navigator: Transforming Your Organization in the Era of Digital Design and Collaborative Culture*. University of Toronto Press, Scholarly Publishing Division, released November 2018. Research-based book for corporate executives. Revised edition focused on AI forthcoming in fall 2025.

Peer Reviewed Engineering Journal Publications:

1. Ghasemi, P. Yuan, C., Marion, T.J., Moghaddam, M. 2024. DCG-GAN: Design Concept Generation with Generative Adversarial Networks. *Design Science*, 10:e14.

2. Moghaddam, M., Marion, T., Holtta-Otto, K., Fu, K., Olechowski, A., & McComb, C. 2023. Special Issue: Emerging Technologies and Methods for Early-Stage Product Design and Development. *Journal of Mechanical Design*. 145(4): 1-3.

3. Yuan, C., Marion, T.J., Moghaddam, M. 2023. DDE-GAN: Integrating a Data-driven Design Evaluator into Generative Adversarial Networks for Desirable and Diverse Concept Generation. *Journal of Mechanical Design*, 145(4): 1-18.

4. Yuan, C., Marion, T.J., Moghaddam, M. 2022. Leveraging End-User Data for Enhanced Concept Evaluation: A Multimodal Regression Model. *Journal of Mechanical Design*, 144(2).

5. Zeid, A., Sundaram, S., Moghaddam, M., Kamarthi, S., & Marion, T.J. 2019. Interoperability in Smart Manufacturing: Research Challenges. *Machines*, *7*(2): 21.

6. Marion, T.J., Sipahi, R. and Delice, I. 2009. Early-Stage Firms and Delay-Based Inventory Control Using Decision Making Tableau's. *International Journal of Production Research*, 48(18): 5497-5521.

7. Marion, T.J. and Simpson, T.W. 2009. New Product Development Practice Application to an Early-Stage Firm: The Case of the PaperPro® StackMaster™. *Design Studies*, 30(5): 561 - 587.

8. Marion, T.J., Thevenot, H. and Simpson, T.W. 2007. A Cost-Based Methodology for Evaluating Sourcing Decisions with Two Examples. *International Journal of Production Research*, 45(22): 5285-5308.

9. Alizon F., Khadke K., Thevenot H.J., Gershenson J.K., Marion T.J., Shooter S.B. and Simpson T.W. 2006. Frameworks for Product Family Design and Development. *Journal of Concurrent Engineering: Research & Applications*, 15(2): 187-200.

Peer Reviewed Management Journal Publications:

1. Piller, F., Srour, M., Marion, T.J. 2024. Generative AI, Innovation, and Trust. *Journal of Applied Behavioral Science*, 1-10.

2. Marion, T.J., Fixson, S.K. 2021. The Transformation of the Innovation Process: How Digital Tools are Changing Work, Collaboration, and Organizations in New Product Development. *Journal of Product Innovation Management*, 38(1): 192-215. 2022 Thomas P. Hustad Best Paper Award. This paper also was honored with a Top Cited Article 2021-22 Award (among work published in an issue of *Journal of Product Innovation Management* between 1 January 2021 – 15 December).

3. Seidel, V.P., Marion, T.J., Fixson, S.K. 2020. Innovating How to Learn Design Thinking, Making, and Innovation: Incorporating Multiple Modes in Teaching the Innovation Process. *INFORMS Transactions On Education*. 20(2): 73-84.

4. Marion, T.J. and Meyer, M.H., 2018. Organizing to Achieve Modular Architecture Across Different Products. *IEEE Transactions on Engineering Management*, 65(3): 404-416.

5. Candi, M., Roberts, D.L., Marion, T. and Barczak, G., 2018. Social Strategy to Gain Knowledge for Innovation. *British Journal of Management*, 29(4): 731-749.

6. Dunlap, D., Parente, R., Geleilate, J. M., & Marion, T. J. 2016. Organizing for innovation ambidexterity in emerging markets: taking advantage of supplier involvement and foreignness. *Journal of Leadership & Organizational Studies*, 23(2), 175-190.

7. Marion, T.J., Eddleston, K.A., Friar, J.H. and Deeds, D. 2015. The evolution of interorganizational relationships in emerging ventures: An ethnographic study within the new product development process. *Journal of Business Venturing*, 30(1): 167-184.

8. Reid, M., Hultink, E.J., Marion, T.J., Barczak, G. 2015. The Impact of IT Tool Usage on the Predevelopment Phase of the NPD Process. *Information & Management*, 53(4): 422-434.

9. Marion, T.J., Meyer, M.A. and Barczak, G. 2015. The Influence of Digital Design and IT on Modular Product Architecture. *Journal of Product Innovation Management,* 32(1): 98-110.

10. Marion, T.J., Barczak, G. and Hultink, E.J. 2014. Do Social Media Tools Impact the Development Phase? An Exploratory Study. *Journal of Product Innovation Management*, 31(1): 18-29.
11. Meyer, M.A. and Marion, T.J. 2013. Preserving the Integrity of Knowledge and Information in R&D. *Business Horizons*, 56(1): 51-61.

12. Marion, T.J., Dunlop, D. and Friar, J.H. 2012. The University Entrepreneur: A Census and Survey of Attributes and Outcomes. *R&D Management*, 42(5): 401-419.

13. Marion, T.J. Dunlap, D. and Friar, J.H. 2012. Instilling the Entrepreneurial Spirit in Your R&D Team: What Large Firms Can Learn from Successful Start-ups. *IEEE Transactions on Engineering Management*, 59(2): 323-337.

14. Fixson, S. and Marion, T.J. 2012. Back-loading: Unintended Consequences of Digital Design Tools in New Product Development. *Journal of Product Innovation Management*, 29(7): 140-156.

15. Marion, T.J., Friar, J.H. and Simpson, T.W. 2012. New Product Development and Early-Stage Firms: Two In-Depth Case Studies. *Journal of Product Innovation Management*, 29(4): 639-654.

16. Marion, T.J. and Meyer, M.A. 2011. Applying Industrial Design and Cost Engineering to New Product Development in Early-Stage Firms. *Journal of Product Innovation Management*, 28: 773-776.

Peer and Editorial Reviewed Practitioner Journal Publications and Articles:

1. Marion, T.J., Deeds, D., & Friar, J. 2025. How to Manage Slow Cooker Technologies. *Harvard Business Review*, January 14, 2025, Digital Article, Harvard Business Publishing: Cambridge.

2. Marion, T.J., Yuan, C. and Moghaddam, M. 2025. Integrating AI into the Front-End of the New Product Development: A Case Comparison of Traditional and Augmented Processes. *Research-Technology Management*, 68(2): 10-22.

3. Marion, T.J., Srour, M. Piller, F. 2024. Cracking the Code of Generative AI for Innovation: Three questions managers have to answer to benefit from the new AI paradigm, *MIT Sloan Management Review*, 66(1): 14-15. *MIT Sloan Management Review* Top 10 AI reads for 2024.

4. Marion, T.J., Fixson, S.K and Brown, G. 2020. The Skills Tomorrow's Innovation Workforce Will Need. *MIT Sloan Management Review*. 61(2): 1-7.

5. Fixson, S.K., Marion, T.J. 2016. A Case of Crowdsourcing Gone Wrong. *Harvard Business Review*, December 15, 2016, Digital Article, Harvard Business Publishing: Cambridge.

6. Marion, T.J., and Fixson, S.K. 2016. The 4 Main Ways to Innovate in the Digital Economy. *Harvard Business Review*, June 2, 2016, Digital Article, Harvard Business Publishing: Cambridge.

7. Marion, T.J. 2016. 4 Factors that Predict Startup Success, and One That Doesn't. *Harvard Business Review*, May 3, 2016, Digital Article, Harvard Business Publishing: Cambridge.

8. Marion, T.J., Roberts, D., Candi, M., and Barczak, G. 2016. Customizing Your Social Strategy to the Platform. *MIT Sloan Management Review*. Spring issue sidebar article.

9. Marion, T.J., Hultink, E.J., Reid, M., Barczak, G. 2016. The Influence of Collaborative IT Tools on NPD. *Research-Technology Management*, 59(2): 47-54.

10. Marion, T.J. and Friar, J.H. 2012. Managing Global Outsourcing to Enhance Lean Innovation. *Research-Technology Management*, 55(5): 44-50.

11. Marion, T.J., Fixson, S.K. and Meyer, M.H. 2012. The Problem with Digital Design. *MIT Sloan Management Review*, 53(4): 63-68.

12. Meyer, M.A., Marion, T.J. and Crane, F.G. 2010. Selling Innovation to the C-Suite. *Research-Technology Management*, 53(4): 15-20.

13. Meyer, M.A. and Marion, T.J. 2010. Innovating for Effectiveness: Lessons from Design Firms. *Research-Technology Management*, 53(5): 21-28.

Manuscripts Under Review, Revision, and Working Papers:

1. Marion, T.J., Yang, M., Banzaert, A., Becker, K., Brubaker, E., Bruggeman, R., Cowherd, R., Das, M., Duarte, J.P., Fixson, S., Gerber, L., Goucher-Lambert, K., Heydari, B., Jablokow, K., Kotecha, M., McGowan, A.M., Nickerson, J., Pantelic, A., Ranger, B., Reid Smith, T., Simpson, T. Extreme Design: An Editorial on a New Research Discipline within Engineering Design, *Journal of Mechanical Design*, Editorial. Under revision.

2. Fixson, S.K. and Marion, T.J. Seeing through the Fog: An Integrative Framework for the Management of Innovation Activities. *Journal of Product Innovation Management*. Under revision.

3. Marion, T.J., Fixson, S.K., Eddleston, K.A., Schulze, B. Systemic Failure of an Open Innovation System: The Unintended Consequences of Scaling Collaboration and Competition. Working paper.

4. Lyyra, A., Koskinen, K., Sørensen, C., & Marion, T. Tethered Architectures in Cyber-Physical System Development: The Case of Tesla's Autopilot System. Under revision. Available at SSRN 451506. To be submitted to *Information Systems Research*.

5. Olechowski, A., Deng, Y., & Marion, T. Does Synchronous Collaboration Improve Collaborative Computer-Aided Design Output: Results from a Large-Scale Competition. Working paper.

Book Chapters:

1. Marion, T.J., Moghaddam, M., Ciuccarelli, P., Wang, L. 2023. "AI for User-Centered New Product Development—from Large-Scale Need Elicitation to Generative Design," in the *PDMA Handbook of New Product Development*.

2. Reid, M., Marion, T., Erik-Jan, H., Barczak, G. 2017. The Influence of Open Innovation, IT Orientation and External Collaboration on the Use of New Media and Social Networking IT

during the NPD Process. In Nambisan, S. (Eds.) *Open Innovation, Ecosystems and Entrepreneurship: Issues and Perspectives*. World Scientific Publishing.

3. Marion, T., Friar, J., Dunlap, D. 2017. Startups and TTOs: Fostering Entrepreneurship at a Large Research University. In *University Technology Transfer and Academic Entrepreneurship*. World Scientific Publishers.

4. Marion, T.J., Dunlap, D. and Friar, J.H. 2015. Northeastern University: A Study of Technology Transfer and Academic Entrepreneurship. In Link, A.N., Siegel, D.S., Wright, M., *The Chicago Handbook of University Technology Transfer and Academic Entrepreneurship*. Chicago: The University of Chicago Press.

5. Ayyamperumal, P., Vinu, R., Zeid, A., Karmarthi, S. and Marion, T.J. *Sustainable Design*. 2013. In Kamrani, A., Azimi, A., Al-Ahmari, A. (Eds.) *Methods in Product Design: New Strategies in Reengineering*. CRC Press: Taylor & Francis Group.

6. Marion, T.J. 2011. Product Modularity. In J.N. Sheth, N.K. Malhotra & B.L Bayus (Eds.) *Wiley International Encyclopedia of Marketing*, volume of *Product Innovation and Management*. West Sussex UK: John Wiley & Sons Ltd.

7. Meyer, M.A., de Weck, O. and Marion, T.J. 2011. Product Platforms. In J.N. Sheth, N.K. Malhotra & B.L Bayus (Eds.) *Wiley International Encyclopedia of Marketing*, volume of *Product Innovation and Management*. West Sussex UK: John Wiley & Sons Ltd.

8. Seiloff, S., Marion, T.J., Friar, J.H. and Kinnunen, R. 2010. Adnexus Corporation Case. In M.J. Ahn, M.A. Alvarez, A.D. Meyers & A.S. York (Eds.) *Making the Case for Building Biotechnology: A Case Book for Life Sciences Commercialization.* Washington DC: Logos Press.

9. Marion, T.J. and Simpson, T.W. 2005. Market Segmentation and Platform Leveraging Strategies. In T.W. Simpson, Z. Saddique & R.J. Jiao (Eds.) *Product Platform and Product Family Design: Methods and Applications*. New York: Springer.

Case Simulations:

1. Marion, T.J. and Fixson, S.K. 2017. *Innovation Simulation: Breaking News*! Harvard Business Publishing. Used by ~70,000 students worldwide (as of early-2025).

Peer Reviewed Conference Proceedings (Engineering and Management):

1. Bruggeman, R., Ciliotta Chehade, E., Marion, T. J., & Ciuccarelli, P. 2025. Probabilistic Methods for Evaluating Human and LLMs During Design Problem-Solving. Proceedings of the Design Society (ICED25).

2. Bruggeman, R., Ciliotta Chehade, E., Marion, T. J., & Ciuccarelli, P. 2024. Towards a Computational Model of Abstraction in Design Reasoning. In Proceedings of the Annual Meeting of the Cognitive Science Society (Vol. 46).

3. Han, Y., Bruggeman, R., Peper, J., Chehade, E. C., Marion, T., Ciuccarelli, P., & Moghaddam, M.

2023. Extracting Latent Needs From Online Reviews Through Deep Learning Based Language Model. Proceedings of the Design Society, 3, 1855-1864. Designated a reviewer's favorite.

4. Ghasemi, P., Yuan, C., Marion, T., & Moghaddam, M. 2023. Are Generative Adversarial Networks Capable of Generating Novel and Diverse Design Concepts? An Experimental Analysis of Performance. Proceedings of the Design Society, 3, 633-644. Designated a reviewer's favorite.

5. Fixson, S.K. and T.J. Marion 2023. Seeing through the Fog: An integrated framework for dynamic performance metrics with the innovation process, Proceedings of the 30th International Product Development Management Conference, Lecco, Italy, June 7-9, 2023.

6. Deng, Y., Marion, T., & Olechowski, A. 2022, August. Does Synchronous Collaboration Improve Collaborative Computer-Aided Design Output: Results From a Large-Scale Competition. In International Design Engineering Technical Conferences and Computers and Information in Engineering Conference (Vol. 86267, p. V006T06A026). American Society of Mechanical Engineers.

7. Marion, T. J., Olechowski, A., & Nambisan, S. 2022. Synchronous Computer-Aided Design (CAD): A Mid-level Technology Affordance Perspective. In Academy of Management Proceedings (Vol. 2022, No. 1, p. 11794). Briarcliff Manor, NY 10510: Academy of Management.

8. Lungeanu, R., Wiersema, M. F., & Marion, T. J. 2022. Investor Activism and Firm Time Horizon: Do Activist Campaigns Influence Firms' Strategic Priorities. In Academy of Management Proceedings (Vol. 2022, No. 1, p. 16294). Briarcliff Manor, NY 10510: Academy of Management.

9. Marion, T., Cannon, D., Reid, T., & McGowan, A. M. 2021. A conceptual model for integrating design thinking and lean startup methods into the innovation process. Proceedings of the Design Society, 1, 31-40.

10. Marion, T., Olechowksi, A., & Guo, J. 2021. An analytical framework for collaborative cloud-based CAD platform affordances. Proceedings of the Design Society, 1, 375-384.

11. Marion, T. J., Fixson, S., & Brown, G. 2019, July. The Changing Nature of Digital Tools and Design Work: A Longitudinal Study. In Academy of Management Proceedings (Vol. 2019, No. 1, p. 15607). Briarcliff Manor, NY 10510: Academy of Management.

12. Marion, T., & Fixson, S. 2019, July. The influence of collaborative information technology tool usage on npd. In Proceedings of the Design Society: International Conference on Engineering Design (Vol. 1, No. 1, pp. 219-228). Cambridge University Press.

13. Marion, T., & Friar, J. 2019, July. The Role of Enabling Technologies in Transformative Innovation. In Proceedings of the Design Society: International Conference on Engineering Design (Vol. 1, No. 1, pp. 1293-1302). Cambridge University Press.

14. Marion, T. J. and S. K. Fixson 2018. The Influence of Collaborative IT on NPD, Proceedings of the 25th International Product Development Management Conference, Porto, Portugal, June 10-13, 2018.

15. Marion, T. J. and S. K. Fixson (2016). Strategies to expand the scope of your innovation engine, Proceedings of the 23rd International Product Development Management Conference, Glasgow, Scotland, June 12-14, 2016.

16. Fixson, S. K. and T. J. Marion (2016). When innovation stumbles – limits to open innovation?, Proceedings of the 23rd International Product Development Management Conference, Glasgow, Scotland, June 12-14, 2016.

17. Marion, T. J. and S. K. Fixson (2015). Does an Open Innovation Process influence NPD Effectiveness? Proceedings of the 22nd International Product Development Management Conference, Copenhagen, Denmark, June 14-16, 2015.

18. Reid, M., Hultink, H. J., Marion, T., & Barczak, G. 2015. The impact of open innovation climate and its resources on it artifact use and outcomes in the NPD process. In 22nd Innovation and product development management conference, Copenhagen, Denmark (pp. 1-20). EIASM.

19. Dunlap, D. R., Geleilate, J. M. G., Parente, R. C., & Marion, T. J. 2015. Innovation Ambidexterity and Knowledge Sources: The Role of Foreignness and Supplier Involvement. In Academy of Management Proceedings (Vol. 2015, No. 1, p. 11359). Briarcliff Manor, NY 10510: Academy of Management.

20. Riedl, B. C., Marion, T. J., & Picot, A. 2014, January. The Influence of Personal Traits on Innovative Processes in Virtual Teams. In 2014 47th Hawaii International Conference on System Sciences (pp. 350-359). IEEE.

21. Marion, T. J. and S. K. Fixson 2014. Backloading: An Exploratory, Quantitative Investigation by NPD Phase, Proceedings of the 21th International Product Development Management Conference, Limerick, Ireland, June 14-16, 2014.

22. Meyer, M., Marion, T. J., & Smulders, F. 2014. Organizing to Effect Modular Architecture in Product Development. In Academy of Management Proceedings (Vol. 2014, No. 1, p. 13723). Briarcliff Manor, NY 10510: Academy of Management.

23. Reid, M., Hultink, E. J., Marion, T., & Barczak, G. 2013. The impact of IT tool usage on predevelopment performance. In IPDMC 2013: 20th International Product Development Management Conference, Paris, France, 23-25 June 2013.

24. Fixson, S. K. and T. J. Marion. 2013. The Perfect Storm: How the Convergence of Digital Design, Rapid Prototyping, and Culture is changing Product Development. Proceedings of the 20th International Product Development Management Conference "Re-Enchanting Technology", Paris, France, June 24-25, 2013.

25. Marion, T. J., Fixson, S. K., and V. P. Seidel. 2013. Teaching Innovation: It's not the Course, it's the Curriculum. Proceedings of the 20th International Product Development Management

Conference "Re-Enchanting Technology", Paris, France, June 24-25, 2013.

26. Marion, T. J., Barczak, G., Meyer, M. H., & Brown, G. 2012, July. 3.1. 1 The Impact of IT on Product Architecture and Project Outcomes. In INCOSE International Symposium (Vol. 22, No. 1, pp. 355-370).

27. Dunlop-Hinkler, D., Parente, R., Marion, T. J., & Friar, J. H. 2011, June. The role of technology agility on business processes and organizational agilities. In First international technology management conference (pp. 67-75). IEEE.

28. Marion, T. J., & Fixson, S. 2011. THE BENFITS AND PITFALLS OF DIGITAL DESIGN TOOLS. In DS 68-10: Proceedings of the 18th International Conference on Engineering Design (ICED 11), Impacting Society through Engineering Design, Vol. 10: Design Methods and Tools pt. 2, Lyngby/Copenhagen, Denmark, 15.-19.08. 2011 (pp. 370-379).

29. Marion, T. J. 2009. A framework for balancing efficiency and effectiveness in innovative product design. In DS 58-1: Proceedings of ICED 09, the 17th International Conference on Engineering Design, Vol. 1, Design Processes, Palo Alto, CA, USA, 24.-27.08. 2009 (pp. 369-378).

30. Marion, T. J., & Schumacher, M. 2009. Moving new venture new product development from information push to pull using web 2.0. In DS 58-3: Proceedings of ICED 09, the 17th International Conference on Engineering Design, Vol. 3, Design Organization and Management, Palo Alto, CA, USA, 24.-27.08. 2009.

31. Marion, T. J. 2008, June. On the use of global cost modeling early in new product development. In 2008 IEEE International Engineering Management Conference (pp. 1-7). IEEE.

32. Marion, T.J., Delice, I.I., Sipahi, R., Characterizing Stability of Inventories in Supply Chains with Delays in Early-Stage Firms, IEEE International Engineering Management Conference, Portugal, 2008.

33. Alizon, F., Marion, T. J., Shooter, S. B., & Simpson, T. W. 2008, January. Product family design: strategic principles to choose between product-driven and platform-driven processes. In International Design Engineering Technical Conferences and Computers and Information in Engineering Conference (Vol. 43253, pp. 1019-1029).

34. Alizon, F., Marion, T. J., Shooter, S. B., & Simpson, T. W. 2007. Tools for the Platform Designer'S Toolbox. In DS 42: Proceedings of ICED 2007, the 16th International Conference on Engineering Design, Paris, France, 28.-31.07. 2007 (pp. 567-568).

35. Marion, T. J., & Simpson, T. W. 2007, January. On the Use of a Simplified New Product Development Process in an Early-Stage Firm. In International Design Engineering Technical Conferences and Computers and Information in Engineering Conference (Vol. 48043, pp. 581-591).

36. Marion, T. J., Freyer, M., Simpson, T. W., & Wysk, R. A. 2006, January. Design for mass customization in the early stages of product development. In International Design Engineering Technical Conferences and Computers and Information in Engineering Conference (Vol. 42584,

pp. 673-682).

37. Steva, E. D., Rice, E. N., Marion, T. J., Simpson, T. W., & Stone, R. B. 2006, January. Two methodologies for identifying product platform elements within an existing set of products. In International Design Engineering Technical Conferences and Computers and Information in Engineering Conference (Vol. 4255, pp. 811-821).

38. Simpson, T. W., Marion, T., De Weck, O., Holtta-Otto, K., Kokkolaras, M., & Shooter, S. B. 2006, January. Platform-based design and development: current trends and needs in industry. In International Design Engineering Technical Conferences and Computers and Information in Engineering Conference (Vol. 4255, pp. 801-810).

Patents and Invention Disclosures:

1. INV-22057. Multi-Modal Data-Driven Design Concept Evaluator PCT/US2023/010122. Northeastern University. Licensed to Ada IQ, Inc. Pending.

2. INV-23026. DATA-DRIVEN DESIGN EVALUATORS INTEGRATED INTO GENERATIVE ADVERSARIAL NETWORK. PCT/US23/078635 PCT 11/3/22. Northeastern University. Licensed to Ada IQ, Inc. Pending.

3. INV-24037. An Intelligent Platform for Identifying, Embedding, and Optimizing the Integration of User Data into the Product Design and Development Process. 63/613,104 Provisional US 12/21/23. Northeastern University. Licensed to Ada IQ, Inc. Pending.

4. INV-24052. DESIGN CONCEPT GENERATION WITH GENERATIVE ADVERSARIAL NETWORKS. 63/606,914. Provisional US 12/6/23. Northeastern University. Licensed to Ada IQ, Inc. Pending.

5. Scraper Assembly US US10188256B2 Tucker J. Marion MIW Associates, LLC Priority 2010-07-30. Filed 2016-07-20. Granted 2019-01-29. Assignee: MIW Associates, LLC.

6. Scraper Assembly Patent Number: US09227301B2 Publication Date: 2016-01-05 Application Number: US13/195,690 Filing Date: 2011-08-01 Inventor：Weinberger, Marvin, Marion, Tucker J. Assignee: MIW Associates, LLC.

7. Brush Assembly WO US US8225451B2 Tucker J. Marion Innovation Factory, Inc. Priority 2008-01-31. Filed 2009-02-02. Granted 2012-07-24.

8. Ice Scraper WO US US8438688B2 Tucker J. Marion MIW Associates, LLC Priority 2009-01-23. Filed 2010-01-22. Granted 2013-05-14.

9. Ice Scraper. Patent number: 7526831. Type: Grant. Filed: January 17, 2007. Date of Patent: May 5, 2009. Assignee: Innovation Factory, Inc. Inventors: Marvin Weinberger, Tucker J. Marion.

External Grants:

1. SBIR Phase I: "Methods for Embedding User Data into 3D Generative AI Computer-Aided-Design Models." NSF 23-515, $275,000. Calvin Smith PI, Tucker Marion and Mohsen Moghaddam, company officers and contributors, 2024 – 2025. ADATech LLC.

2. National Science Foundation, #2303707, PI, Engineering Design and System Engineering, CMMI, Conference: "EXTREME Design": Examining Frontiers and Research in Extreme Design, $98,270, 2023-2024. Co-PI, Dr. Maria C. Yang.

3. National Science Foundation, #2050052 (#205013), Co-PI, Engineering Design and System Engineering, CMMI, Collaborative Research: From User Reviews to User-Centered Generative Design: Automated Methods for Augmented Designer Performance. PI Mohsen Moghaddam, Co-PI Paolo Ciuccarelli, Co-PI Lu Wang (University of Michigan) Total $620,730 ($203,870, UofM), 2022-2024.

4. NASA Langley Research Center (LaRC), IPA Visiting Scholar, Convergent Aeronautics Solution (CAS) Project, $60,000, 2020.

5. National Collegiate Inventors & Innovators Alliance (NCIIA) grant for "Accelerating Student E-Team New Venture Creation through the Application of Industrial Design and Structured Seed Funding," $9,000.00 1-year planning grant, 2010. PI.

6. National Collegiate Inventors & Innovators Alliance (NCIIA) grant for "Development of a Multi-Disciplinary New Product Development Course Curricula for the School of Technological Entrepreneurship," $29,000.00, 2008, 3-year program grant. PI. Co-PIs with John H. Friar, College of Business Administration, Sagar Karmarthi, College of Engineering.

7. Received North America Case Research Association (NACRA) grant for "Cases for a Multi-Disciplinary New Product Development Course," $10,000.00, 2008, 1-year case development program. PI, Co-PIs with John Friar, College of Business Administration, Sagar Kamarthi, College of Engineering.

Grants Under Review or Revision:

1. "TRAILBLAZER*: Multi-modal, Hyper-local Manufacturing and Supply Chains with SHAPE*," NSF, PI Dr. Tucker Marion. Under review.

2. "ADVANCED Teams: ADvancing VirtuAl INnovation and Collaboration in Engineering Design (ADVANCED) Teams," CMMI EDSE. #10008977, $796,325. PI, Dr. Babak Heydari, Co-PI Tucker Marion, Co-PI Tahira Reid-Smith, Penn State. Revising to resubmit.

3. "IUCRC Northeastern University and MIT: Center for Emerging Design Technologies (CEDT)," Dr. Tucker Marion and Dr. Maria Yang, Co-PIs. Revising to resubmit.

Internal Grants:

1. Spark Commercialization Fund, Center for Research Innovation, Northeastern University, ADATech LLC, Co-PI, $50,000, 2022-2023.

2. Impact Engine, PI, Northeastern University, Advanced Design Augmentation (ADA) Through AI for Socially-Aware Product Design, $37,000, 2022.

3. Institute for Global Innovation Management (IGIM), "Collaborative Innovation Networks," $71.445.00, 2012, 1-year research initiative. Co-PIs with Gloria Barczak, Cuneyt Eroglu, Rosanna Garcia, Felicia Lassk and Yang Lee. Co-PI with Gloria Barczak on one research product (out of four, totaling $17,250).

4. Northeastern University Tier 1 Interdisciplinary Research Proof of Concept Grant, "Research Frontiers in Healthcare Mass Customization for Personalization of Diagnosis, Care and Cure," $50,000.00, 2012, 1-year development grant. Co-PIs with Abe Zeid and Sagar Kamarthi, College of Engineering.

5. Northeastern University 2011 CBA Strategic Research Award Recipient, 2011.

6. Northeastern School of Technological Entrepreneurship (STE)/College of Business Administration (CBA) research grant for "Technology Transfer Investigation at Northeastern," $10,000.00, 2008, 1-year research project. PI.

7. Northeastern Research and Scholarship Development Fund grant for "New Product Development Practices at Early-Stage Firms," $7,500.00, 2008, 3-year program duration. PI.

Awards:

1. 2022 Thomas P. Hustad Best Paper Award, *Journal of Product Innovation Management*.

2. Shulze Publication Award, "Turn Your Idea into an Innovation," Entrepreneurship and Innovation Exchange, 2021.

3. Innovation Simulation: Breaking News, Harvard Business Publishing, 2018 Gold Medal Winner, 2018 International Serious Play Awards.

4. Shulze Publication Award for Applied and Practice Research, with John Friar, Kim Eddleston and David Deeds, Entrepreneurship and Innovation Exchange, 2015.

5. Nominated for University Excellence in Teaching Award, Northeastern University, 2013-2014.

6. Dell ReGeneration Design Educator Award, 2008.

Invited Publications:

1. Marion, T.J. Implementing Design Thinking. *CIMS Newsletter*, May/June 2018.

2. Marion, T.J. The Importance of Lean Innovation. *CIMS Innovation Management Report*, January 2017.

3. Marion, T.J. and Friar, J.H. Think Small and Innovate Like a Start-up. *CIMS Innovation Management Report*, March/April 2014.

4. Meyer, M.H. and Marion, T.J. Stopping Knowledge Loss in R&D. *CIMS Innovation Management Report*, March/April 2013.

Talks and Seminars:

1. Co-host, new Entrepreneurship, Design, and Innovation Podcast with Siemens. First Podcast recorded January 8th, 2025.

2. "AI and Life Sciences," Panel guest, Loft Design Webinar, 2024.

3. "AI and New Product Development," Panel guest, Loft Design Webinar, 2024.

4. "The Transformation of Innovation: How Digital Tools Continue to Reinvent the New Product Development Process," MIT Sloan School of Management, 2023.

5. "AI and Product Design." Invited panelist, PTC Onshape Research Forum, August 2023.

6. "Emerging Technologies and Methods for Early Stage Product Design and Development," Co-presenter and organizer, ASME IDETC-CIE 2023 Workshop.

7. "AI Technology as Support in Early-Stage Design," Co-organizer and co-presenter. International Conference of Engineering Design (ICED) 2023 Workshop.

8. "AI and Massive Scale" Co-organizer and co-presenter. International Product Development Management Conference 2023 Special Community Workshop.

9. "Mass Personalization and Micro Moments." Invited speaker, CTO Forum, 2022.

10. "The Case of Q." Invited talk, UMass Lowell, October 2021.

11. "Innovation Metrics," Invited talk, NASA, 2021.

12. "Collaboration is King: How Global Teams Optimize Product Design in Onshape" with Dr. Alison Olechowski, University of Toronto, and Greg Brown, LiveWorx 2020.

13. "Disruption 2020," Invited talk with Sebastian K. Fixson, MIT Sloan Management Review Virtual Symposium, 2020.

14. "The Innovation Navigator." Book talk. Northeastern University, Toronto campus, 2019.

15. "The Digital Technology Arc," Invited talk, with Sebastian K. Fixson and Greg Brown, LiveWorx 2019.

16. "The Innovation Navigator." Book talk with Sebastian K. Fixson. Rotman School of Management, University of Toronto Lifelong Learning Conference, 2018.

17. "The Expanded Innovation Landscape." Workshop with S. Fixson, ISPIM Toronto 2017 and Boston 2018.

18. "Marketing and Sales for Technology-Driven Companies." Invited speaker, SBANE, 2016.

19. "Rapid Concept Development." Invited speaker, Innovation Leader Teach-in, Harvard iLab, 2016.
20. "New Venture Development." Invited speaker, TU Delft, March 2015.

21. "Lean Innovation." Invited speaker. PDMA Netherlands Masterclass, March 2014.

22. "Interorganizational Relationships and New Ventures." Invited speaker. RMIT University, Melbourne, AU, February, 2014.

23. "Technology Entrepreneurship." IEEE Society speaker, Northeastern University, October, 2013.

24. "Trends in Emerging Technology." James F. Molloy speaker, Northeastern University, March 2012.

25. "Academic Research and Innovation." Invited panelist at the 5th Annual EMC Innovation Conference, Franklin, MA, November, 2011.

26. "Design and Entrepreneurship." Invited speaker, TransCultural Exchange International Conference, Boston, MA, April 2011.

27. "Technology Entrepreneurship." Invited speaker, Institute of Industrial Engineers, Washington, DC, March 2011.

28. "New Product Development Practices and Early-Stage Firms." Invited research presentation, Northeastern University, College of Engineering, October 2007.

29. "New Product Development in the 21st Century." Invited research presentation, Penn State University, The Harold and Inge Marcus Department of Industrial and Manufacturing Engineering, February 2007.

30. "Design Optimization at a Start-Up: A Case Study at the Innovation Factory." Invited presentation, Massachusetts Institute of Technology. Boston, MA, May 2006.

31. "Adopting Product Platform Methodology to a Start-Up: A Case Study at the Innovation Factory." Invited presenter. 2005 Innovations in Product Development Conference - Product Families and Product Platforms: From Strategic Innovation to Implementation, Massachusetts Institute of Technology, Boston, MA, October 2005.

Teaching Experience and Courses Taught:

Undergraduate

Northeastern University (2007 – present)

ENTR 3330 Introduction to Product Design for Entrepreneurs (2009 – 2021).

ENTR3335 Product Innovation and Portfolio Management (2021 – 2022)

The Pennsylvania State University (2005 – 2006)

BA 497 Introduction to Entrepreneurship (2005 – 2006).

Graduate

EGMT 6225 Economic Decision Making

INNO 6200 Enterprise Growth & Innovation

ENTR 6217 Lean Innovation (2014 – present).

TECE 6222 Disruptive and Emerging Technologies (2007 – 2022).

ENTR 6250 Lean Design and Development (2009 – present).

TECE 6300 Managing a Technology-Based Business (2008 – 2013).

The Pennsylvania State University (2006 – 2007)

QMM 571 Product Design and Development (2006 – 2007).

Online Graduate

Northeastern University

ENTR 6250 Lean Design and Development (2023 – present).

ENTR 6217 Lean Innovation online MSI course (2016 – present).

ENTR 6212 New Venture Creation online MBA course (2009 – present).

Executive Education:

"Integrating AI into the Innovation Process." Multi-hour experiential sessions.

"Reinventing Your Innovation Engine." Single or multi-day workshops based on *The Innovation Navigator*.

"Value stream mapping and lean implementation." Workshops and modules.

"Design Thinking." Custom workshops and boot camps.

"Lean Innovation and Corporate Venturing." Custom workshops, multi-day innovation boot camps, and long-term embedded engagements with R&D teams.

"Issues in International Expansion and Sourcing." International growth and sourcing lectures and workshops.

Sessions delivered for: Ericsson, GE, Dell-EMC, EMC, Duke Energy, Progress Software, Boston Scientific, Bristol-Myers Squibb, BAE Systems, Rogers Corporation, Nixon-Peabody LLP, KFAS, US Naval Postgraduate School, and others.

Graduate Student Advising:

1. Ryan Bruggeman, Northeastern University, College of Arts Media and Design, dissertation expected in 2026.

2. Parisa Ghasemi, Northeastern University, College of Engineering, Mechanical and Industrial Engineering Department, 2022 - 2024. https://www.linkedin.com/in/parisa-ghasemi/

3. Yi Han, Ph.D. Northeastern University, College of Engineering, Mechanical and Industrial Engineering Department, dissertation defended in 2023. Entered industry.

4. Sarvesh Sundaram, Ph.D. Northeastern University, College of Engineering, Mechanical and Industrial Engineering Department, dissertation defended in 2023. Entered industry. https://www.linkedin.com/in/sarveshsundaram/

5. Soumyakant Padhee. Northeastern University, College of Engineering, Mechanical and Industrial Engineering Department, defended July 2023. Expected to enter industry. https://www.linkedin.com/in/soumyakant-padhee-03438758/

6. Chenxi Yuan, Ph.D., Northeastern University, College of Engineering, Mechanical and Industrial Engineering Department, completed Ph.D. in 2022. Assistant Professor, New Jersey Institute of Technology. https://www.linkedin.com/in/chenxi-yuan-586bb112b/

7. Keivan Sadeghzadeh, Ph.D., Northeastern University in Industrial Engineering, focused on Applied Statistics, Reliability, and Data Science, completed Ph.D. in 2015. Dissertation Topic: Analytic for Data-Driven Decision-Making in Complex High-Dimensional Time-to-Event Data. Post doc: MIT, Sloan School of Management. Currently an Associate Teaching Professor, Northeastern D'Amore-McKim School of Business. https://www.linkedin.com/in/keivansz/

8. Alexandre Mendes, Ph.D., Northeastern University in Industrial Engineering (Predictive Analytics and Reliability), 2014. Entered industry. Currently Chief Q& FS Officer, Danone. Previously VP Engineering Transformation, PepsiCo. https://www.linkedin.com/in/alex-c-mendes-ph-d-349874/

9. Gordon Engineering Leadership Program, faculty thesis supervisor, 5 students.

Undergraduate Student Advising:

Vinaik Gautam, *Honors student*, (January, 2020 - May, 2021)

5 other independent studies

University Service:

MSx Platform Faculty Director (2020 – present) (includes STL, PwC, and Mayo programs)

DMSB Partnership Innovation Director (2020 – present) (includes Semester-in San Francisco advising)

Masters of Science in Innovation (MSI) Faculty Director (2014 – 2023)

Member, DMSB Graduate Programs Advisory Council (2013 - present)

Curricular and Learning Products Group (Experiential Education for University Planning), 2021

Future of Northeastern Task Force (2020)

Group Chair, Academic Programs and Non-tenured Faculty (2017-2020)

DMSB Masters Task Force (2018-2019)

High-Technology MBA Faculty Director (2013 – 2015)

Co-organizer, Collaborative Innovation Network Industry and Academic Conferences (2012 – 2014)

IDEA Prototype Fund, Faculty Advisor (2013-2014)

IDEA and Husky Innovation Challenge Guest Speaker (various dates)

CRI RISE Judge and presenter (various dates)

Reviewing and Professional Service:

NSF CMMI Panel Fellow

Editorial Review Board, *Journal of Product Innovation Management*.

Editorial Review Board, *Journal of Concurrent Engineering: Research and Applications (CERA)*

Editorial Review Board, *Research-Technology Management (RTM)*

Associate Editor, *Journal of Mechanical Design,* special issue.

Design Society, Design Special Interest Group Member (2023 – present)

Co-organizer, 2021 *Journal of Product Innovation Management* Research Forum Conference.

Co-organizer, 7 Academy of Management (AoM) Professional Development Workshops (PDW)

Proposal Reviewer, Swiss National Science Foundation (2022 – present)

Conference Co-chair, Front-end of Innovation (FEI) (2021)

NSF Proposal Review Panelist, CMMI, EDSE (2008 – 2009)

Ad Hoc Journal Reviewer

MIT Sloan Management Review, Journal of Business Venturing, IEEE Transactions on Engineering Management, R&D Management, Design Studies, Academy of Management Perspectives, International Journal of Production Research, Journal of Engineering Design, Journal of Mechanical Design, IEEE Access, Research in Engineering Design.