

# Marlon D. Twyman II

University of Southern California

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## ACADEMIC EMPLOYMENT

### UNIVERSITY OF SOUTHERN CALIFORNIA (Los Angeles, CA)

**July 2019-** Assistant Professor, Annenberg School for Communication and Journalism, Department of  
**Present** Communication

## EDUCATION

### NORTHWESTERN UNIVERSITY (Evanston, IL)

**2019** Ph.D., Technology and Social Behavior (joint program in Dept. of Communication Studies and  
Dept. of Electrical Engineering and Computer Science)

### WRIGHT STATE UNIVERSITY (Dayton, OH)

**2012** M.S. Biomedical Engineering

**2010** B.S. Biomedical Engineering, *Cum Laude*, University Honors Scholar

## RESEARCH INTERESTS

Social networks	Computer-support cooperative work
Team formation/Team assembly	Computational social science
Diversity in groups & teams	Human-computer interaction

## AWARDS, FELLOWSHIPS, AND SCHOLARSHIPS

**2019** USC Provost Assistant Professor Fellowship

University of Southern California Office of the Provost

**2017** Donald H. and Carolyn E. Ecroyd Fellowship

Northwestern University School of Communication

**2016** Best Student Paper – Runner-up

Interdisciplinary Network for Group Research Conference, Helsinki, Finland

**2014** Google, Inc. Travel Grant: National Society of Black Engineers (NSBE) Professional Development Conference, Phoenix, AZ

**2013** GEM Fellowship (PhD Funding/5 years), The National GEM Consortium, Alexandria, VA

**2010** Air Force Research Lab/DAGSI Research Fellowship,

Dayton Area Graduate Studies Institute, Dayton, OH

**2009** Senior Scholarship, NASA Ohio Space Grant Consortium

**2008** Choose Ohio First Scholarship, University System of Ohio

**2007** Wright STEPP Full-Tuition Scholarship, Wright State University (renewed 3 years until 2010)

**2007** NSF Glenn Stokes Research Internship, NSF Ohio Science and Engineering Alliance

**2006** Competitive Honors Scholarship, Honors College, WSU (renewed 4 years until 2010)

**2006** C.J. McLin Student Leadership Development Scholarship, WSU (renewed 4 years until 2010)

**2006** Horizons in Medicine Full-Tuition Scholarship, WSU

## PUBLICATIONS & PRESENTATIONS

\* Denotes graduate student mentee or advisee

### Book Chapters

1. **Twyman, M.** & Contractor, N. (2019). Team Assembly. In: Hall K., Vogel A., Croyle R. (eds) *Strategies for Team Science Success*. Springer, Cham

### Working Papers

2. Sun, J.\* & **Twyman, M.** The Social Dynamics of Hierarchical Knowledge Categorization: A Study of Kaggle Competitions [under preparation]
3. **Twyman, M.** Categorization and Social Status in an Online Data Science Platform [under preparation]
4. **Twyman, M.**, Newman, D., DeChurch, L., & Contractor, N. Teammate Invitation Networks: The Roles of Online Recommender Systems and Prior Collaboration in Team Assembly [under preparation]

### Published Conference Proceedings

5. Gómez-Zará, D., Paras, M., **Twyman, M.**, Lane, J.N., DeChurch, L.A., & Contractor, N.S. (2019). Who Would You Like to Work With?: Use of Individual Characteristics and Social Networks in Team Formation Systems. In *CHI Conference on Human Factors in Computing Systems (CHI 2019), May 4-9, 2019, Glasgow, Scotland, UK*. ACM, New York, NY, USA, 15 pages. <https://doi.org/10.1145/3290605.3300889> [acceptance rate: 24%]
6. **Twyman, M.**, Keegan, B. C., & Shaw, A. (2017). Black Lives Matter in Wikipedia: Collective Memory and Collaboration Around Online Social Movements. In *Proceedings of the 2017 ACM Conference on Computer Supported Cooperative Work and Social Computing* (pp. 1400–1412). New York, NY, USA: ACM. <https://doi.org/10.1145/2998181.2998232> [acceptance rate: 35%]
7. **Twyman, M.**, Mullenbach, J., Shultz, C., Colgate, J. E., & Piper, A. M. (2015). Designing Wearable Haptic Information Displays for People with Vision Impairments. In *TEI '15: Proceedings of the Ninth International Conference on Tangible, Embedded, and Embodied Interaction* (pp. 341–344). New York, NY, USA: ACM. <https://doi.org/10.1145/2677199.2680578> [acceptance rate: 28%]

### **Conference Presentations & Posters**

1. Sun, J.\* & **Twyman, M.** The Social Dynamics of Hierarchical Knowledge Categorization: A Study of Kaggle Competitions. Extended Abstract presented at the *70<sup>th</sup> Annual International Communication Association Conference (ICA 2020)*, Virtual Conference, May 20-26, 2020.
2. Gómez-Zarà, D., Ng, J., **Twyman, M.**, DeChurch, L., Andreoli, S., Contractor, N. (2018, July). Social Cognition and Team Assembly: Competence, Warmth, or Embeddedness. Paper presented at the *Interdisciplinary Network for Group Research Conference*, Bethesda, MA, July 18-21, 2018.
3. **Twyman, M.**, Mesmer-Magnus, J., Lungeanu, A., DeChurch, L. A., & Contractor, N. S. (2018, July). The Emergence and Development of Crew Shared Mental Models: An Agent-Based Model. Paper presented at the *Interdisciplinary Network for Group Research Conference*, Bethesda, MA, July 18-21, 2018.
4. **Twyman, M.**, Mesmer-Magnus, J., Lungeanu, A., DeChurch, L. A., & Contractor, N. S. (2018, July). The Emergence and Development of Crew Shared Mental Models: An Agent-Based Model. Paper presented at *2018 International Conference on Computational Social Science (IC2S2)*. Evanston, Illinois, July 12-15, 2018.
5. Tanaka, K., Jha, S., Gado, H., **Twyman, M.**, DeChurch, L. A., & Contractor, N. S. (2018, June). 6-DoS (Six Degrees of Separation): A Web-Based Platform to Conduct Small-World Experiments. Paper presented at the XXXVIII Sunbelt Conference of the International Network for Social Network Analysis (INSNA), Utrecht, Netherlands, June 26-July 1, 2018.
6. Gómez-Zarà, D., Ng, J., **Twyman, M.**, DeChurch, L., Contractor, N. (2018, March). Social Cognition and Team Assembly: Competence, Warmth, or Embeddedness. Paper presented at the *ATLAS Teams Research Incubator Weekend*, Evanston, IL, USA, March 16-18, 2018.
7. **Twyman, M.**, Ma, L., Srivatsa, M., Cansever, D., & Contractor, N. (2017, May). Searching Networks to Assemble Teams. Paper presented at *Army Research Laboratory Network Science Collaborative Technology Alliance Annual Technical Meeting*, Newark, Delaware, May 2-3, 2017.
8. DeChurch, L.A., Schultz, M., Johnson, J., Contractor, N.S., Mesmer-Magnus, J., Plummer, G., **Twyman, M.** (2017, January). Structured Text Analysis for Evaluating Shared Cognition. Paper presented at the *NASA Human Research Program Investigators' Workshop*, Galveston, TX, January 23-26, 2017.
9. **Twyman, M.**, Newman, D., DeChurch, L., & Contractor, N. (2016, October). Networks of Computer-Mediated Team Assembly. Paper presented at the *Organizational Communication Mini-Conference 2016*, Evanston, Illinois, September 30-October 2, 2016.

10. **Twyman, M.**, Newman, D., DeChurch, L., & Contractor, N. (2016, July). The Ties that Form Teams: Self-Organization, Homophily, and Multiplexity. Paper presented at *Interdisciplinary Network for Group Research Conference*, Helsinki, Finland, July 14-16, 2016. **\*Runner-up: “Best Student Paper” Award**
11. **Twyman, M.**, Wax, A., DeChurch, L., & Contractor, N. (2015, July). Looking for Leadership: Understanding Team Assembly in a Web Technology. In A. Wax and M. Twyman (co-chairs), *Technologies for Studying and Enabling Teams*. Symposium conducted at the *Interdisciplinary Network for Group Research Conference*, Pittsburgh, Pennsylvania, USA, July 23-25, 2015.
12. **Twyman, M.**, Newman, D., DeChurch, L.A., & Contractor, N.S. (2018, April). Inviting Your Next Teammate: Algorithms & Acquaintances. Poster presented at the *Society for Industrial and Organizational Psychology (SIOP) Annual Conference*, Chicago, IL, April 19-21, 2018.
13. **Twyman, M.**, Lungeanu, A., DeChurch, L., & Contractor, N. (2018, January). The emergence and development of crew shared mental models: An agent-based model. Poster presented at the *NASA 2018 Human Research Program Investigators' Workshop*, Galveston, TX, January 22-25, 2018.
14. Contractor, N., DeChurch, L., Antone, W., **Twyman, M.**, Gibson, Z., Sawant, A., Gado, H., & Bell, S. (2018, January). Teamstar: A Tool for evaluating and mitigating space team risk. Poster presented at the *NASA 2018 Human Research Program Investigators' Workshop*, Galveston, TX, January 22-25, 2018.
15. DeChurch, L., Park, P., Lungeanu, A., **Twyman, M.**, & Contractor, N. CREST: Crew Recommender for Effectively Switching Tasks. (2018, January). Poster presented at the *NASA 2018 Human Research Program Investigators' Workshop*, Galveston, TX, January 22-25, 2018.
16. **Twyman, M.**, Newman, D., DeChurch, L., & Contractor, N. (2017, October). Inviting Your Next Teammate: Algorithms and Acquaintances. Poster presented at *Organizational Communication Mini-Conference 2017*, Athens, Ohio, October 13-15, 2017.
17. **Twyman, M.**, Keegan, B. C., & Shaw, A. (2017, July). Black Lives Matter in Wikipedia: Collective Memory and Collaboration Around Online Social Movements. Poster presented at *2017 International Conference on Computational Social Science (IC2S2)*. Cologne, Germany, July 10-13, 2017.
18. **Twyman, M.**, DeChurch, L., & Contractor, N. (2017, June). Using a Network Approach for Modeling Shared Cognition of Astronaut Teams. Poster presented at *NetSci 2017*

- International School and Conference on Network Science*, Indianapolis, Indiana, June 19-23, 2017.
19. **Twyman, M.**, Ma, L., Srivatsa, M., Cansever, D., & Contractor, N. (2017, June). Searching Networks to Assemble Teams. Poster presented at *NetSci 2017 International School and Conference on Network Science*, Indianapolis, Indiana, June 19-23, 2017.
  20. **Twyman, M.**, DeChurch, L. & Contractor, N. (2016, April). The Impact of Homophily and Multiplex Networks on the Assembly of Teams. Poster presented at *Sunbelt XXXVI Conference, International Network for Social Network Analysis*, Newport Beach, CA, April 5-10, 2016.
  21. DeChurch, L., Contractor, N., Johnson, J., Mesmer-Magnus, J., Plummer, G., **Twyman, M.**, Niler, A., Larson, L. & Hernandez, I. (2016, February). SCALE: Shared Cognitive Architecture for Long-Distance Exploration. Poster presented at *NASA 2016 Human Research Program Investigators' Workshop, Galveston, TX*, February 8-11, 2016.
  22. **Twyman, M.**, Wax, A., DeChurch, L., & Contractor, N. (2015, June). Emergence of Assembly & Leadership Networks in Teams. Poster presented at *NetSci 2015 International School and Conference on Network Science*, Zaragoza, Spain, June 1-5, 2015.

## ADDITIONAL PUBLICATIONS & PRESENTATIONS

### Refereed Journals

1. Eyink, K., Grazulis, L., Mahalingam, K., Shoaf, J., Hart, V., Esposito, D., Hoelscher, J., **Twyman, M.**, Tomich, D. (2012). Nanofabricated quantum dot array formation through annealing of nano-patterned planar InAs. *Journal of Vacuum Science and Technology. Materials, Processing, Measurement, & Phenomena: JVST B.*,30(4), 041806. <https://doi.org/10.1116/1.4731471>
2. Eyink, K., Grazulis, L., **Twyman, M.**, & Mahalingam, K. (2010). Study of the driving force for the self-assembly of heterojunction quantum dots (zero D molecules) using finite element analysis. *Journal of Vacuum Science and Technology. Materials, Processing, Measurement, & Phenomena: JVST B.*,28(3), C3C33-C3C36. <https://doi.org/10.1116/1.3273902>

### Published Conference Proceedings

3. Mahalingam, K., Eyink, K., **Twyman, M.**, Shoaf, J., & Grazulis, L. (2010). Strain Relaxation in Planar InAs Epitaxial Layers Studied by High-Resolution Transmission Electron

*Microscopy. Microscopy and Microanalysis*, 16(S2), 1786-1787.

<https://doi.org/10.1017/S1431927610059702>

4. Eyink, K., Grazulis, L., Mahalingam, K., **Twyman, M.**, Shoaf, J., Hoelscher, J., ... Tomich, D. (2010). Shape changes in patterned planar InAs as a function of thickness and temperature (Vol. 7610, p. 761000–761000–8). <https://doi.org/10.1117/12.845939>

### ***Conference Presentations & Posters***

5. **Twyman, M.** (2010, April). Sensor-activated electromagnetic track. Paper presented at *Ohio Space Grant Consortium Research Project Symposium*, Cleveland, Ohio, USA, April 16, 2010.
6. Eyink, K., Grazulis, L., **Twyman, M.**, & Mahalingam, K. (2009, August). A Study of the Driving Force for the Self Assembly of Heterojunction Quantum Dots (Zero-D Molecules) Using Finite Element Analysis. Paper presented at *26th North American Molecular Beam Epitaxy Conference*, Princeton University, New Jersey, USA, August 9-12, 2009.
7. **Twyman, M.**, Bozeman, J., Mawasha, P.R., & Yelamarthi, K. (2007, August). A Parametric Study on the Material Properties of a Shape Memory Polymer. Poster presented at *Ohio Student Research Forum*, Wright State University, Ohio, USA, August 9-10, 2007.

## **RESEARCH EXPERIENCE**

**2013-2019 NORTHWESTERN UNIVERSITY** Research Assistant

*Social networks in* ***Science of Networks in Communities (SONIC) Lab*** (2014-2019)

*organizations* Advisor: Dr. Noshir Contractor

Researched organizational topics with focus on social network analysis, team assembly, and network search strategies (finding teammates and collaborators)

Participated in sponsored research projects funded by the NSF, NIH, ARL, and NASA

*Human-computer* ***Neuroscience and Robotics (NxR) Lab: Surface Haptics Group*** (Spring 2014)

*interaction* Primary Investigator: Dr. Ed Colgate

Prototyped and developed software in Android for TPaD technology (touchscreen interfaces)

***Inclusive Technology Lab*** (Fall 2013—Summer 2014)

Primary Investigator: Dr. Anne Marie Piper

Designed and developed Android applications for a wearable user interface for visually impaired people

## TEACHING EXPERIENCE

**2019-2020 UNIVERSITY OF SOUTHERN CALIFORNIA** (Los Angeles, CA)

*Center for Excellence in Teaching New Faculty Institute*

Completed development program for new faculty

**2015-2018 NORTHWESTERN UNIVERSITY** (Evanston, IL) Teaching Assistant

*Kellogg School of Management, McCormick Engineering, School of Communication*

*Social networks,* Assisted in the instruction of courses for MBA, executives, undergraduate, and M.S. students

*Organizations,* Prepared course assignments, administered classroom activities, designed experiential learning

*Executive training* exercises, created lecture materials, graded assignments, and held office hours.

- **Design of Networks** with Noshir Contractor (Fall 2015 & Fall 2016), *Kellogg School of Management & McCormick Engineering*: MBA/M.S. students in Design Innovation (TA rating: 4.8/6.0)
- **Social Network Analysis** with Noshir Contractor (Spring 2016), *McCormick Engineering & School of Communication*: Undergraduate students across engineering and communication (TA rating: 5.7/6.0)
- **Networks and Innovation** with Noshir Contractor and Paul Leonardi (Dec. 2016 & Nov. 2017), *Kellogg School of Management Executive Education*: Executives participating in the Leading into The Future: Managing in a Changing World program (no TA ratings collected)
- **Social Network Analysis** with Noshir Contractor (Fall 2018), *McCormick Engineering & School of Communication*: Ph.D. students across engineering and communication (TA rating: 6.0/6.0)

## INVITED TALKS

**2018 UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN** (Champaign, IL)

School of Labor and Employment Relations

**2018 UNIVERSITY OF SOUTHERN CALIFORNIA** (Los Angeles, CA)

Annenberg School for Communication and Journalism: Department of Communication

**2019 UNIVERSITY OF NOTRE DAME** (South Bend, IN)

Mendoza College of Business: Information Technology, Analytics, and Operations

**2019 SYRACUSE UNIVERSITY** (Syracuse, NY)

School of Information Studies

**2019 NORTHWESTERN UNIVERSITY** (Evanston, IL)

Center for Connected Learning and Computer-Based Modeling

**2019 UNIVERSITY OF SOUTHERN CALIFORNIA** (Los Angeles, CA)

Center for Applied Network Analysis

## PROFESSIONAL EXPERIENCE

- Summer 2016** **IBM T.J. WATSON RESEARCH CENTER** (Yorktown Heights, NY)  
Research Intern  
***Cognitive Distributed Analytics***  
Manager: Dr. Mudhakar Srivatsa, Mentor: Dr. Liang Ma  
*Algorithms, Simulation* Designed and implemented computational models for expertise search in networks when assembling problem-solving teams
- Summer 2013** **THE MITRE CORPORATION** (McLean, VA)  
Consulting Intern  
***Infrastructure, Operations, & IT Service Management***  
*Healthcare IT, Strategy* Developed internal materials for potential impact of automatic network discovery on telemental health group therapy practices for veterans with post-traumatic stress disorder (PTSD)
- BJC HEALTHCARE** (St. Louis, MO)  
Project Management Intern
- Spring 2013** ***Project Management in Clinical Engineering/Assets Management***  
*Project management* Developed software for resource productivity tracking to streamline workflow for Displaced Assets Program (program saves **\$4 million** annually), and aided in buying medical devices (**\$7 million** purchase)
- 2012** ***Strategy and Development in Center for Clinical Excellence***  
*Strategy, Process improvement* Collected data and facilitated development of new processes in two hospitals, developed metrics and data visualization dashboard for process optimization of Displaced Assets Program
- Summer 2011** **JOINT CENTER FOR POLITICAL & ECONOMIC STUDIES** (Wash., DC)  
Policy Intern  
***Media and Technology Institute***  
Mentor: Dr. Nicol Turner-Lee (now at Brookings Institution)  
*Technology policy* Researched policy on Broadband Internet, broadband adoption in USA, and networking architecture
- WRIGHT PATTERSON AIR FORCE BASE** (Dayton, OH)  
Research Assistant
- 2010-2012** ***Human Performance Wing***  
(funded M.S. in Biomedical Engineering)  
*Digital signal processing* Analyzed EEG signals, processed MRI images, and designed user interface for a research CT scanner
- Summer 2009** ***Sensors and Optics***  
(funded by Chenega Federal Systems in Lorton, VA; Secret Clearance)  
*High-performance computing* Conducted finite element modeling of semiconductor materials using cluster computing
- 2008—2012** ***Sensors and Optics***  
(funded by Southwestern Ohio Council for Higher Education)



*Hardware* Prepared microscope samples, operated multiple high-end instruments, and maintained lab space

## **WRIGHT STATE UNIVERSITY**

Research Scholar

**2009—2010** *NASA Ohio Space Grant Consortium*

“Senior Scholarship for Research” Award

*Sensors, Circuits* Built a sensor-activated electromagnet track, implemented an alternative design at United Rehabilitation Services of Greater Dayton

**Summer 2007** *NSF Ohio SEA Glenn-Stokes*

Research Intern

*Experimental design* Designed and conducted experiment for material properties of shape memory polymers

## **ACADEMIC SERVICE**

### **Program Committee:**

Organizational Communication Mini-Conference 2016, Northwestern University, Evanston, IL

- Reviewed abstracts, created program and schedule, managed logistics, and coordinated events for a student-organized conference with over 100 attendees

### **Reviewing Duties:**

**Ad Hoc Journal Reviews:** Small Group Research

**Conferences:** Academy of Management, Computer-Supported Cooperative Work and Social Computing (CSCW 2020), Interdisciplinary Network for Group Research

### **University Service:**

Northwestern University: The Graduate School, Child and Family Resources Advisory Board

- Developed strategies to increase engagement of graduate-student parents with university-provided funding and resources, including conception and implementation of new events and programming

## **PROFESSIONAL MEMBERSHIPS**

Academy of Management

Association for Computing Machinery

Interdisciplinary Network for Group Research

International Network for Social Network Analysis

National Society of Black Engineers

Order of the Engineer

Tau Beta Pi Engineering Honor Society Ohio Mu Chapter

## MENTORING

### Ph.D. Students:

- Jingyi Sun, University of Southern California, Annenberg School for Communication and Journalism

### Undergraduates:

- Brian Gee, Northwestern University, Major: Industrial Engineering
- Yixian (Amy) Wang, Northwestern University, Major: Industrial Engineering and Mathematical Methods in the Social Sciences

## MEDIA ENGAGEMENT

Dec. 2019 **Quoted in “As Algorithms Battle Biases, Researchers Say Hiring Software Must Be More Than Meets the A.I.” by Tiernan Ray**

*Fortune*

<https://fortune.com/2019/12/26/hiring-software-algorithm-artificial-intelligence-biased/>

May 2019 **Podcast Guest on “NUWorkWell: Navigating the Academic Job Search”**

Northwestern University—The Graduate School initiative on Work, Life & Wellness

<https://www.buzzsprout.com/245987/1129961-work-well-navigating-the-academic-job-search?play=true>