

# MATTHEW R. FRANCISCO – CV

Bloomington, Indiana

francm@indiana.edu

## EDUCATION

MS/PhD, Science and Technology Studies, August 2010

Rensselaer Polytechnic Institute; Troy, New York

Advisor: Dr. Linnda Caporael

Title: *Agents on the Loose: Embodied Reflexive Practice in Emerging Computational Social Science*

Certificate, Technology Transfer and Commercialization

Wheeling Jesuit University and the National Technology Transfer Center; Wheeling, West Virginia

Completed: August 2002

BA, Southwest Studies

Fort Lewis College; Durango, Colorado

Minors: Computer Science; Music

Graduation Date: December 2001

## TEACHING AND INSTRUCTIONAL DESIGN EXPERIENCE

*Director of Undergraduate Studies.* Department of Informatics. Indiana University Bloomington.

July 2025 - Present

*Lead Instructor and Director of Curriculum.* Luddy Precollege Summer Program

January 2021 – August 2024

*Senior Lecturer.* Indiana University Bloomington, Indiana

“I453 Computer and Information Ethics”, “I341 Prototyping with Arduino Tools”, “I400 Explorations in Educational Technology”, “I549 Advanced Prototyping”, and “I101 Introduction to Informatics and Computing”

*Team Facilitator.* West Liberty State College, West Virginia

Emerging Minority Business Leaders (EMBL) Summer Institute.

*Teaching Assistant.* Rensselaer Polytechnic Institute, New York

“Design, Culture, and Society”, “Politics and Economics of Information Technology”, and

“Design, History, and Society”

*Team Facilitator.* Wheeling Jesuit University, West Virginia

June 2006. Emerging Minority Business Leaders Summer Institute.

## PROFESSIONAL APPOINTMENTS

Senior Lecturer, Luddy School of Informatics, Computing, and Engineering

Indiana University Bloomington, July 2022—Present

Lecturer, Luddy School of Informatics, Computing, and Engineering

Indiana University Bloomington, 2016—2022

Visiting Lecturer, School of Informatics and Computing

Indiana University Bloomington, 2014—2016

Research Associate, School of Informatics and Computing  
Indiana University Bloomington, 2013—2015

Systems Architect, School of Informatics and Computing  
Indiana University Bloomington, 2012 – 2014

Visiting Research Associate, School of Informatics and Computing  
Indiana University Bloomington, 2010 – 2012

Team Facilitator, Emerging Minority Business Leaders Institute,  
Wheeling Jesuit University and West Liberty University, 2006, 2008, 2010, and 2011.

Teaching Assistant, Department of Science and Technology Studies  
Rensselaer Polytechnic Institute, 2004, 2007-2008

Graduate Research Assistant, Department of Computer Science  
Rensselaer Polytechnic Institute, 2004-2007

## FUNDED GRANTS

### *Senior Personnel*

January 2015. NSF Innovative Technology Experiences for Students and Teachers: “Human-Centered Robotics Experiences for Exploring Engineering, Computer Science, and Society.” Cindy Hmelo-Silver (IU), Selma Sabanovic (IU), Seta Bogosyan (UAF) and Orion Lawlor (UAF).

### *Senior Personnel*

March 2013. Indiana University Collaborative Research Grant: “Social SLAM: Creating Dynamical Socio-Environmental Models for Mobile Robots.” Selma Sabanovic and Luis Rocha, Principal Investigators

### *Co-Principal Investigator*

January 2008. National Science Foundation Dissertation Improvement Grant: “Doctoral dissertation research: Impact of agent-based computational modeling on the sociological imagination of an emerging academic field.” Linnda Caporael, Principal Investigator

## JOURNAL ARTICLES

Francisco, M., & Wu, Y. (2025). Computer and Information Ethics in the Era of AI: A Pedagogical Design for Conceptual Muddles. *Proceedings of the 7th Annual Symposium on HCI Education*, 1–10. <https://doi.org/10.1145/3742901.3742915>

Gomoll, A., Šabanović, S., Tolar, E., Hmelo-Silver, C. E., Francisco, M., & Lawlor, O. (2018). Between the Social and the Technical: Negotiation of Human-Centered Robotics Design in a Middle School Classroom. *International Journal of Social Robotics*, 10(3), 309–324. <https://doi.org/10.1007/s12369-017-0454-3>

Gomoll, A., Hmelo-Silver, C., Tolar, E., Šabanović, S., & Francisco, M. (2017). Moving Apart and Coming Together: Discourse, Engagement, and Deep Learning. *Journal of Educational Technology & Society*, 20(4), 219-232. Retrieved March 17, 2021, from <http://www.jstor.org/stable/26229219>

Gomoll, A., Hmelo-Silver, C. E., Šabanović, S., & Francisco, M. (2016). Dragons, Ladybugs, and Softballs: Girls’ STEM Engagement with Human-Centered Robotics. *Journal of Science Education and Technology*, 1–16.

Francisco, M., Milojevic, S., and Sabanovic, S. “Conference models to bridge micro and macro studies of science.” *Journal of Artificial Societies and Social Simulation*. 14 (4) 13, 2011.

Baumes J., Chen H., Francisco M., Goldberg M., Magdon-Ismael M., and Wallace W. "ViSAGE: A virtual laboratory for the simulation and analysis of social group evolution." *ACM Transactions on Autonomous and Adaptive Systems*, August 2008.

## CONFERENCE PAPERS AND PRESENTATIONS

Gomoll, A., Hmelo-Silver, C. E., Sabanovic, S., & Francisco, M.. "Embodiment and framing: Key pieces of deep learning in one student interview," Symposium session: Fostering deep learning in problem-solving contexts through effective design of learning environments with technology support at the American Educational Research Association Annual Meeting (AERA, 2017), San Antonio, TX, USA., 2017.

Hmelo-Silver, C., Gomoll, A., Francisco, M., Sabanovic, S., & Novak, W.. "Collaborative research: ITEST strategies: human-centered robotics experiences for exploring engineering, computer science, and society,," Symposium session Finding the Hook: Engaging Teachers and Students in Computer Science at the American Educational Research Association 2016 Annual Meeting (AERA 2016), Washington D.C., United States., 2016.

Sabanovic, S., Francisco, M., Hmelo-Silver, C., Gomoll, A., & Novak, W.. "Exploring Sociotechnical Systems in STEM Education: A Human-Centered Robotics Curriculum for Grades 6-12". Society for the Social Studies of Science. Denver, CO, USA 2015.

Francisco, M., Wood, I., Šabanović, S., Rocha, L. (2014). Designing a Minimalist Socially Aware Robotic Agent for the Home. *Proceedings of the 14th International Conference on the Synthesis and Simulation of Living Systems (Artificial Life 14)*, New York, NY 2014, pp. 876-883

Arreola, I., Morris, Z., Francisco, M., Connelly, K., Caine, K., White, G. "From checking on to checking in: Designing for low socio-economic status older adults." *Computer Human Interaction 2014*, Toronto, Canada, 2014.

M. D. Conover, B. Gonçalves, J. Ratkiewicz, M. Francisco, A. Flammini, and F. Menczer, "Political polarization on twitter," in *Proceedings of the 5th International Conference on Weblogs and Social Media*, 2011.

Francisco M. "Reflexive and embodied practices for computer modeling and simulation." In *Society for the Social Studies of Science (4S)*, Cleveland, Ohio, 2011.

Francisco M., Sabanovic S. "Scaffolder: An interface for agent-based discourse" In *SwarmFest 2009*, Santa Fe, NM, 2009.

Sabanovic S., Francisco M. "Weaving culture into the transnational web of science" In *Society for the Social Studies of Science (4S)*, Rotterdam, Netherlands, 2008.

Francisco M., Caporael L. "Designing classrooms with ABM." In *SwarmFest 2008*. Chicago, Illinois.

Francisco M. "Institution building with agent-based modeling: Bringing simulation into the humanities classroom." At Santa Fe Complex BarCamp on Tools and Curricula for the Digital Bottega. Santa Fe, New Mexico 2008.

Francisco M., Chen H., Goldberg M., Magdon-Ismael M., Wallace W. "A research infrastructure for machine learning in social networks." In *Third International Conference on e-Social Science*. Ann Arbor, Michigan, 2007. <<http://ess.si.umich.edu/papers/abstract211.pdf>>

Francisco M., Caporael L., Wallace W., Magdon-Ismael M., and Goldberg M. "Growing the demic structure of science: A prototype generative case study strategy." In *North American Association for Computational Social and Organizational Science (NAACSOS)*, Atlanta Georgia, 2007.

Francisco M. "The scientists' image makers: A potential level of manipulation in constructing technoscience." In Society for the Social Studies of Science (4S), Vancouver, Canada, 2006.

Francisco M., Goldberg M., Magdon-Ismael M., and Wallace W. "Using agent-based modeling to traverse frameworks in theories of the social." In International Conference on Complex Systems (ICCS), Boston, 2006. <<http://necsi.org/community/wiki/index.php/ICCS06/394>>

Francisco M., Baumes J., Chen H., Goldberg M., Magdon-Ismael M., and Wallace W. "Modeling subjectivity: Towards computational critique?" In North American Association for Computational Social and Organizational Science (NAACSOS), South Bend, Indiana, 2006.

Baumes J., Chen H., Francisco M., Goldberg M., Magdon-Ismael M., Wallace W. "The dynamics of bridging and bonding in social groups." In North American Association for Computational Social and Organizational Science (NAACSOS), Indiana, 2005.

## HONORS AND AWARDS

- International AAAI Conference on Web and Social Media (ICWSM) Test of Time Award 2021 for the paper "Political Polarization on Twitter" (2011 Conover et. al.)
- National Science Foundation Dissertation Improvement Award, 2008
- Rensselaer Graduate Fellowship, 2003 – 2004
- Outstanding Student in Entrepreneurial Technology Apprenticeship Program, 2002
- Fort Lewis College Dean's List, 1999 – 2001
- Hartley B. Dean Scholarship, 1999
- University of New Mexico Dean's List, 1998 – 1999
- Department of Defense, Office of Naval Research Scholarship, 1997 – 1999
- Chief Manuelito Academic Excellence Award, 1997 – 2001