Dr. Michael H.G. Hoffmann

H. Bruce McEver Professor in Engineering and the Liberal Arts
Jimmy and Rosalynn Carter School of Public Policy, Philosophy Program
685 Cherry Street, N.W., DM Smith Building, room 208. Phone: (404) 385 6083
Homepage: https://spp.gatech.edu/people/person/michael-hoffmann
E-mail: m.hoffmann@gatech.edu

Curriculum vitae

Table of Contents

Earned Degrees

Dr. phil. habil.	Philosophy, Technische Hochschule Dresden, 2003
Dr.	Philosophy, Ludwig-Maximilians Universität, München, 1993
M.A.	Philosophy, Ludwig-Maximilians Universität, München, 1990. Minors: Old Testament and Political Sciences

Employment

2020, Aug – present	Full Professor for Philosophy, School of Public Policy, Georgia Institute of Technology, Atlanta, GA
2004, Aug – 2020, Aug	Associate Professor for Philosophy, School of Public Policy, Georgia Institute of Technology
2013, Aug – 2014, Jul	Interim Chair (Director), School of Public Policy, Georgia Institute of Technology,
2004, Feb – Jul	Post-doc fellow, Faculty of Education, University of Victoria, BC, Canada
2003, Jun – 2004, Jan	Research Scientist, Institut für Didaktik der Mathematik (IDM, a research institute for mathematics education), Universität Bielefeld
1997, May – 2003, May	Assistant Professor (C1), IDM, Universität Bielefeld
1996, Oct – 1997, May	Research Scientist, IDM, Universität Bielefeld
1995, Jun – 1996, Oct	Research Scientist, IDM, DFG Projektstelle, Universität Bielefeld
1994, Jan – 1995, Jun	Research Scientist, IDM, Universität Bielefeld
1992, Jun – 1993, Dec	Research Scientist, Institut für Philosophie, Universität Essen
1983 – 1984	Research Assistant, Forschungsinstitut für Friedenspolitik, Starnberg

Publications (selection)

A. Published books, book chapters, and edited volumes

A1. Books

Hoffmann, M. H. G. (2005). *Erkenntnisentwicklung. Ein semiotisch-pragmatischer Ansatz [Knowledge development. A semiotic and pragmatic approach]*. Frankfurt am Main: Klostermann.

Hoffmann, M. H. G. (1996). *Die Entstehung von Ordnung. Zur Bestimmung von Sein, Erkennen und Handeln in der späteren Philosophie Platons [Genesis of Order. Ontology, Epistemology, and Political Action in Late Plato]*. Stuttgart und Leipzig: B.G. Teubner.

A2. Edited Volumes

Hoffmann, M. H. G., Lenhard, J., & Seeger, F. (Eds.). (2005). *Activity and Sign - Grounding Mathematics Education.* New York: Springer.

Hoffmann, M. H. G. (Ed.). (2003). *Mathematik verstehen – Semiotische Perspektiven [Understanding Mathematics – Semiotic Perspectives]*. Hildesheim: Franzbecker.

B. Refereed publications and submitted articles

B1. Journal Articles

Hoffmann, M. H. G. (2024). Learning to Engage with Wicked Problems in Teams. *Journal of Didactics of Philosophy,* 8, 1-25. https://ojs.ub.rub.de/index.php/JDPh/issue/view/353.

Hoffmann, M. H. G., & Catrambone, R. (2023). Bad arguments and objectively bad arguments. *Informal Logic, 43*(1), 23-90. https://doi.org/10.22329/il.v43i1.7076

Hoffmann, M. H. G. (2021). Consensus Building and Its Epistemic Conditions. *Topoi, 40*(5), 1173-1186. Retrieved from https://doi.org/10.1007/s11245-019-09640-x

Hoffmann, M. H. G. (2021). Reflective Consensus Building on the Nation's Largest Confederate Memorial. A Case Study. *Social Science Quarterly*, 102(3), 1111-1127. http://dx.doi.org/10.1111/ssqu.12970.

Hoffmann, M. H. G. (2020). Reflective Consensus Building on Wicked Problems with the Reflect! platform. *Science and Engineering Ethics*, 26, 793–819. https://doi.org/10.1007/s11948-019-00132-0.

Hoffmann, M. H. G. (2019). Transcendental arguments in scientific reasoning. *Erkenntnis*, 84(6), 1387-1407. doi: 10.1007/s10670-018-0013-9

Hoffmann, M. H. G. (2018). The elusive notion of "argument quality". *Argumentation, 32*(2), 213–240. doi:10.1007/s10503-017-9442-x

Hoffmann, M. H. G. (2018). Stimulating reflection and self-correcting reasoning through argument mapping: Three approaches (online first 2016). *Topoi. An International Review of Philosophy, 37*(1), 185-199. doi: 10.1007/s11245-016-9408-x

Hoffmann, M. H. G. (2016). Reflective Argumentation: A Cognitive Function of Arguing. *Argumentation*, 30(4), 365-397. doi: 10.1007/s10503-015-9388-9

Hoffmann, M. H. G., & Lingle, J. (2015). Facilitating Problem-Based Learning by Means of Collaborative Argument Visualization Software. *Teaching Philosophy*, 38(4), 371-398. doi:10.5840/teachphil2015112039

Hoffmann, M. H. G. (2015). Changing Philosophy through Technology: Complexity and Computer-Supported Collaborative Argument Mapping. *Philosophy & Technology, 28*(2), 167-188. doi: 10.1007/s13347-013-0143-6

Hoffmann, M. H. G., & Borenstein, J. (2014). Understanding Ill-Structured Engineering Ethics Problems Through a Collaborative Learning and Argument Visualization Approach. *Science and Engineering Ethics, 20*(1), 261-276. doi: 10.1007/s11948-013-9430-y

Hoffmann, M. H. G. (2010). "Theoric Transformations" and a New Classification of Abductive Inferences. *Transactions of the Charles S Peirce Society*, 46(4), 570-590.

Hoffmann, M. H. G., & Roth, W.-M. (2007). The complementarity of a representational and an epistemological function of signs in scientific activity. *Semiotica*, 164(1/4 [April]), 101-121.

Hoffmann, M. H. G. (2005). Limits of truth: Exploring epistemological approaches to argumentation. *Informal Logic*, 25(3), 245-260.

Hoffmann, M. H. G. (2005). Logical argument mapping: A method for overcoming cognitive problems of conflict management. *International Journal of Conflict Management***,** *16*(4), 304-334. (Published

12/2006)

B2. Other refereed material

Hoffmann, M. H. G. (2025). Problem-Solving in Mathematics with Theoric Transduction. In S. Arfini (Ed.), *Scientific Cognition, Semiotics, and Computational Agents: Essays in Honor of Lorenzo Magnani - Volume 2* (pp. 103–129). Springer Nature Switzerland. https://doi.org/10.1007/978-3-031-96688-0_6.

Hoffmann, M. H. G. (2022). 'Translating' Geometric into Arithmetic Reasoning as a Case of Negentropic Semiotic. In K. Marais (Ed.), *Translation beyond Translation Studies* (pp. 33-38). London: Bloomsbury.

Hoffmann, M. H. G. (2018). Argument Mapping. *Oxford Bibliographies in Philosophy*. Ed. by Duncan Pritchard. New York: Oxford University Press. Retrieved from www.oxfordbibliographies.com. Doi:10.1093/OBO/9780195396577-0364

Hoffmann, M. H. G. (2011). Visualizing Webs of Beliefs, Values, and Attitudes for Cross-Cultural Understanding. Paper presented at the Global Dialogue Conference 2009: Responsibility -- *Climate Change as Challenge for Intercultural Inquiry on Values*, Aarhus University, Aarhus, Denmark.

C. Other publications and creative products

C1. Invited book Chapters (Editor reviewed)

Hoffmann, M. H. G. (2016). Commentary on Leite, Martins and Eğilmez's Towards an Online Social Debating System. In D. Mohammed & M. Lewiński (Eds.), *Argumentation and Reasoned Action: Proceedings of the First European Conference on Argumentation*, Lisbon, 9-12 June 2015 (Vol. 1, pp. 399-401). London: College Publications.

Hoffmann, M. H. G. (2015). Argument Mapping Software: Semiotic Foundations. In M. Peters (Ed.), *Encyclopedia of Educational Philosophy and Theory* (pp. 1-6): Springer Singapore. Retrieved from http://dx.doi.org/10.1007/978-981-287-532-7_27-1.

Hoffmann, M. H. G. (2014). Chapter 13. In F. Bellucci, A.-V. Pietarinen & F. Stjernfelt (Eds.), *Peirce. 5 Questions* (pp. 105-118). USA / UK: Automatic Press.

Hoffmann, M. H. G. (2013). Cogniçâ e Pensamento Diagramático. In J. Queiroz & L. d. Moraes (Eds.), *A Lógica de Diagramas de Charles Sanders Peirce: Implicações em Ciência Cognitiva, Lógica e Semiótica* (pp. 105-137). Juiz de Fora: Editora da Universidade Federal de Juiz de Fora. (Portuguese Translation of "Cognitive conditions of diagrammatic reasoning." *Semiotica*, 186(1/4), 189-212).

Hoffmann, M. H. G. (2011). Analyzing Framing Processes in Conflicts and Communication by Means of Logical Argument Mapping. In W. A. Donohue, R. G. Rogan & S. Kaufman (Eds.), *Framing Matters: Perspectives on Negotiation Research and Practice in Communication* (pp. 136–164). New York, NY: Peter Lang (pre-print available at https://hdl.handle.net/1853/79991).

Hoffmann, M. H. G., & Roth, W.-M. (2010). Four Functions of Signs in Learning and Interdisciplinary Collaboration. In I. Semetsky (Ed.), *Semiotics - Education - Experience* (pp. 131-150). Rotterdam, NL: Sense Publishers.

Roth, W.-M., & Hoffmann, M. H. G. (2010). Signs in/of Communication. In I. Semetsky (Ed.), *Semiotics - Education - Experience* (pp. 151-174). Rotterdam, NL: Sense Publishers.

C2. Invited journal Articles (Editor reviewed)

Hoffmann, M. H. G. (2018). "... and therefore in a Remote Sense Abduction Rests upon Diagrammatic Reasoning". *EURASIA Journal of Mathematics, Science and Technology Education*, 14(9), 1-14. doi: https://doi.org/10.29333/ejmste/92553.

Hoffmann, M. H. G. (2014). What is "Science"? For What Do We Need a "Polyocular Framework"? Open peer commentary on the article "Second-Order Science of Interdisciplinary Research: A Polyocular Framework for Wicked Problems" by Hugo F. Alrøe & Egon Noe. *Constructivist Foundations, 10*(1), 83–84.

Hoffmann, M. H. G., Schmidt, J. C., & Nersessian, N. (2013). Philosophy of and as Interdisciplinarity (Introduction to a special issue). *Synthese*, 190(11), 1857-1864. doi: DOI 10.1007/s11229-012-0214-8

Hoffmann, M. H. G. (2011). Cognitive conditions of diagrammatic reasoning. *Semiotica*, 186(1/4), 189-212.

Teaching Goals

The goal of my teaching is to foster general reasoning skills: reflection and self-correction; how to approach wicked problems; how to construct strong and convincing arguments; how to assess the quality of arguments; how to clarify ideas and define concepts; learning to work in teams and collaborative problem solving; social learning through mutual criticism and support; enjoying clear thinking.

Funded Projects

A. As principal investigator (PI)

Is commitment to democracy dwindling? A comparison of twelve countries. Ivan Allen College Small Grants for Research Program (SGR-B), Georgia Tech, July 2024 to June 2025. **$5,000.**

Digital guidance for community-engaged student projects. A grant from the Digital Integrative Liberal Arts Center (DILAC) Fund, Ivan Allen College, Georgia Tech, May 2019 to April 2020. **$3,500**. Collaborators: Ruthie Yow, Serve-Learn-Sustain, George Thomas, LMC, and Tracy Woodland, Mad Housers, an NGO in Atlanta.

Digital Deliberation and Social Justice in the Digital Age. A grant from the Digital Integrative Liberal Arts Center (DILAC) Fund, Ivan Allen College, Georgia Tech, August 2018 to May 2019. **$15,000**. Collaborators: Carol Colatrella, LMC, Mike Best (INTA / CS), Robert Rosenberger, PUPB, and Ruthie Yow, Serve-Learn-Sustain

Fostering Self-Correcting Reasoning with Reflection Systems. National Science Foundation (Cyberlearning and Future Learning Technologies, Award 1623419), September 2016 to August 2020. **$549,958**. Collaborators: Richard Catrambone (School of Psychology), and Jeremy Lingle (Center for Education Integrating Science, Mathematics, and Computing)

Digital Deliberation. A faculty grant from the Digital Integrative Liberal Arts Center (DILAC) Fund, Ivan Allen College, Georgia Tech, May 2016 to April 2017. **$19,335**. Collaborator: Christopher Le Dantec (School for Literature, Media, and Communication)

Promoting Educational and Academic Collaboration between the United States and the Russian

Federation by Developing the Web-based Learning Tool AGORA, Developing Engineering Ethics Education and Distance Engineering Laboratories, Sharing Educational Achievements, and by Establishing a Student and Faculty Mobility Program. Fund for the Improvement of Postsecondary Education (FIPSE) of the U.S. Department of Education and the Russian Ministry of Education and Science of the Russian Federation. Grant # P116-S10-0006. September 1, 2010, to August 31, 2015: **$399,860**. Collaborators: Stuart Goldberg (Russian), Steve McLaughlin (Vice Provost for International Initiatives), and Jason Borenstein (Director of Graduate Research Ethics Programs)

B. As Co-Principal Investigator (Co-PI)

Ethics, Technology, and Human Interaction Center (ETHICx). Seedfunding by Georgia Tech's Executive Vice President for Research, August 2020 to July 2023. Total Grant: **$300,000**. My part: **$14,756** in 2021 for one course buy-out. PI: Dean Kaye Husbands Fealing.

Workshop on Assessing Ethics Education Interventions in Science and Engineering. Funded by the NSF program "Cultivating Cultures for Ethical STEM," March 2019 to March 2020. Total grant: **$49,656** (Award 1835276), GT sub-contract: **$5,963**. PI: James B. Holbrook (New Jersey Institute of Technology); Co-PIs: Adam Briggle (University of North Texas), Michael H. Hoffmann, Michael R. O'Rourke (Michigan State University)**.**

Development Proposal for A Modular, Non-Credit Course in Professional Ethics. Funded by Georgia Tech Professional Education, August 2012 to July 2013. **$13,999**. PI: Robert Kirkman (School of Public Policy)

Development and consolidation of the Philosophy of / as Interdisciplinarity Network (PIN-net). Funded by the Udo Keller Stiftung, Neversdorf/Hamburg (Germany): **26.000 Euro plus accommodations** for a workshop in 2010 and a conference in 2012 in Tübingen. PI: Jan C. Schmidt (Hochschule Darmstadt). Collaborators: Robert Frodeman, Britt Holbrook (University of North Texas)

C. As contributor

National AI Institute for Adult Learning and Online Education (AI-ALOE). Funded by NSF, November 2021 to October 2026. Total grant: **$19,990,448** (Grant No. 2247790). PI: Ashok Goel (Georgia Institute of Technology). Co-PIs: Scott Crossley (Vanderbilt University), Chris Dede (Harvard University), Alex Endert (Georgia Institute of Technology), Myk Garn (Georgia Institute of Technology). My sub-contract as a Senior Scientist: **$112,540** for Nov 2021 to Oct 2022 (includes one GRA); slightly increasing year by year. I am responsible for the research theme Ethics and Participatory Design, chair the team "Participatory Design for Human Well-being," and serve additionally on ALOE's Executive Committee.

Planning grant for an ERC proposal on Urban Agricultural Infrastructure Systems. Funded by NSF, November 2019 to August 2021. Total grant: **$100,000**. PI: Yongsheng Chen (GT, Civil and Environmental Engineering). I am consultant for facilitating the process of problem formulation and proposal development with the Reflect! platform. My part: **$1,600,** paid in June 2021.

Global Collaborative Learning (GLoCL) Reflect Project for Online Decision-Making Strategies with Foreign Language Content. **$3,000**. This is a contribution to the Atlanta Global Studies Center (AGSC), a National Resource Center and a Foreign Language and Area Studies (FLAS) Fellowship Program funded by a **$2.25 million** grant from the U.S. Department of Education. The AGSC is housed in the Global Studies Institute in Georgia State University's College of Arts & Sciences and the School of Modern Languages in the Ivan Allen College of Liberal Arts at the Georgia Institute of Technology (January to December 2019)

From Big Data to Deep Insights: Using Watson as a Conversational Cognitive System. IDEAS grant, Georgia Institute of Technology, August 2015 to July 2016. **$40,000**. PI: Ashok Goel (Interactive Computing). Collaborators: Rahul Basole (IC), Timothy Boone (GTRI), Daniel Campbell (GTRI), Michael Chang (BBISS), Edward Coyle (ECE), John Crittenden (CEE), Bistra Dilkina (CSE), Jacob Eisenstein (IC), Alex Endert (IC), Sherry Farrugia (IPaT), Karen Feigh (AE), Katherine Fu (ME), Daniel Haynes (CETL), Karl Jacob (MSE), Roger Jiao (ME), David Joyner (OMSCS), Julie Linsey (ME), Wayne Li (ID), Margaret Loper (GTRI), Amanda Madden (C21U), Keith McGreggor (IC), Elizabeth Mynatt (IC), Wendy Newstetter (CoE), Chaohua Oh (CETL), Christian Paredis (ME), Amy Pritchett (AE), Mark Riedl (IC), David Rosen (ME), Spencer Rugaber (CS), Chrissy Spencer (Biology), Eric Schumacher (Psychology), Cassandra Telenko (ME), William Underwood (GTRI), Alan Wagner (GTRI), Marc Weissburg (Biology), Leanne West (GTRI), Elizabeth Whitaker (GTRI), Jeannette Yen (Biology)

Awards

2024 H. Bruce McEver Professor in Engineering and the Liberal Arts (awarded August 1).

2017 Gold Star 2 Travel Award ($750). A honorable recognition for the project “Digital Deliberation” at the DILAC Showcase on on April 25th. Awarded by Georgia Tech’s Ivan Allen Dean's Chair Fund (Award no. 511000025, May 17).

2011 Gold Star Award in recognition of the highest level of accomplishment in research. Awarded by Georgia Tech’s Ivan Allen College of Liberal Arts.

2006 Mouton d’Or award for the article “What you should know to survive in knowledge societies: On a semiotic understanding of ‘knowledge’,” which appeared in *Semiotica Volume 157*–1/4 (2005). Coauthor: Wolff-Michael Roth (I am first author)

Atlanta, February 6, 2026