Welcome Package

**for (prospective) WTMC PhD Students
and their Supervisors
March 2011**

Contents

- **Introduction**
- **WTMC Training Program (brochure)**
- **WTMC Core Literature List**
- **WTMC Research Skills and Crafts**
- **WTMC Training and Supervision Plan (*Opleidings- en begeleidingsplan*)**
- **Practicalities**
- **Information for Supervisors *(in Dutch)***

Introduction

This package aims to inform PhD students who intend to enter the WTMC Training Programme and their supervisors about the Netherlands Graduate Research School of Science, Technology and Modern Culture (WTMC).

The Netherlands Graduate Research School of Science, Technology and Modern Culture (WTMC) is a collective effort of Dutch scholars studying aspects of the development of science, technology and modern culture. The history, sociology and philosophy of science and technology—science and technology studies (STS)—form the core of the work, but there are also strong inputs from cultural studies and innovation studies. The school coordinates and stimulates research in the field of science and technology studies, provides advanced training for PhD candidates, and aims to enhance the societal significance and visibility of STS.

In the past twenty-four years, the school has acquired a well-known position in the international field of science and technology studies. It aims to teach academic and professional skills in such a way—for instance through the interaction between students and the best scholars in their field—that WTMC graduates feel firmly integrated in the next generation of scholars in science and technology studies. Today, indeed, many of the WTMC graduates have fine jobs at advisory boards, ministries, research institutes and universities, and contribute to the high quality of publications and contemporary debates about the role of science and technology in society.

Participants should have a Masters degree, preferably in Science & Technology Studies, or Innovation Studies or a degree with a sufficient basis in the social sciences and/or humanities. Moreover, participants must have been accepted as PhD candidate by a professor in a Dutch university (a professor with *ius promovendi*). Therefore, unlike the situation at many non-Dutch graduate schools, prospective participants cannot directly apply for a PhD position in WTMC.

By the time you receive this package, your supervisor will have contacted us about your options to take part in the WTMC Training Programme. The information for supervisors at the end of this package clarifies how your supervisor and you need to proceed in order to have you accepted in the programme. One of the things to do is to fill out a Training and Supervision Plan (*Opleidings-and Begeleidingsplan*) that outlines your work and studies for the next few years. Usually, this will be the Training and Supervision Plan provided by your university. The WTMC Training and Supervision Plan we have added to this package, is meant to give you an idea of what we consider a best practive in such training and supervision plans.

We have tried to be as comprehensive as possible about WTMC and its training progamme. Nonetheless, feel free to contact us with any remaining questions.

In this package, you will find:

- A brochure about WTMC and its Training Programme: We advise you to read this brochure before studying the rest of the package. However, there is one thing we would already like to clarify now. As stated in the brochure, our workshops and schools are organised around specific themes, linked to the three clusters of questions which constitute the heart of the WTMC Research Programme. In this, we normally follow the order of clusters as mentioned in the Brochure, that is: Diagnosis of the Modern Research System (the 'W' of WTMC), Technological Development and Societal Regulation (the 'T' of WTMC) and Cultural Roles of Science, Technology and Rationality (the 'MC' of WTMC). The same distinction will also help you to identify the character of the WTMC Core Literature, which leads us to the next item in the package.
- The WTMC Core Literature List: As you will read in the brochure, we prefer a situation in which participants are already familiar with the 'classics' before they enter the programme. Participants with a MA or ReMa in STS will probably meet this requirement to a large extent, but those with a different background will need to do a considerable amount of reading. They will be expected to read the classics in the first phase of the programme. Close reading exercises during workshops and schools will help them to do so. The reading itself, of course, remains your responsibility. If you are not the only WTMC PhD student at your department or university, you could start a reading group that discusses the literature over lunch or in evening meetings. This will probably enhance the pace of your reading, and enables you to exchange insights about the literature.
- The WTMC Research Skills and Crafts (with final attainment aims): This note introduces you into WTMC's final attainment aims concerning your research skills and crafts at the end of the WTMC program, and informs you on how we design the workshops and schools in such a way that we can actually meet these aims. The note also explains what the priorities are in the *national component* of the training program, and what is basically trained in the *local* (or university) *component* of the training program.
- The WTMC Training and Supervision Plan (*Opleidings- en Begeleidingsplan)*
- Information about practical details relevant for attending the WTMC workshops, schools and other events, and about what to do in case you encounter problems during the training or in preparing your dissertation
- Information for your supervisor *(in Dutch)*

Core literature WTMC

Introduction

The Dutch national research school WTMC seeks to analyze, understand and explain the manifold and intricate relationships between science, technology and modern culture. This, of course, is an interdisciplinary effort that draws from and contributes to various research traditions, each with their own literatures. In this overview we list the core literature of the research school WTMC. The aim of this list is threefold:
- it provides an introduction to the intellectual and academic aspirations of WTMC;
- it helps PhD students to locate their studies within a broader set of literatures;
- it supports the ongoing reflection of research agendas within WTMC.

The list of core literature is organized into three categories: classics, introductions and research clusters. The first, the *classics*, is a list of books that operate as a landmark in the broad, yet distinguished field of WTMC research. These scholarly works have introduced a new perspective that has been proved to be useful - and they still inspire the today's researchers. Their contribution to the field is uncontested, although their factual claims may have been challenged, as it should. The classics are systematically introduced and discussed in the WTMC PhD workshops.

The second list, of *introductions*, is in particular useful for new entrants in the field. The classics, of course, are also informative, but may require more background knowledge. The introductions provide an overview of the main perspectives, methods and findings of the research field of WTMC.

The third category, the *research clusters*, proposes a grouping of the many lines of research in WTMC. Within each of the clusters some key references and journals are suggested to orient the individual researcher. They are also used in the programs of the PhD workshops. Together, the research clusters are a demonstration of the richness and excitement of the research school WTMC.

The overview ends with a list of journals that are important for the research school WTMC and an Appendix of annotations of some of the works listed in this overview.

Classics

- Thomas S. Kuhn, 1970, *The Structure of Scientific Revolutions*. Chicago: University of Chicago Press (2nd ed.).

- Karl R. Popper, 1963, *Conjectures and Refutations.* London: Routledge and Kegan Paul.

- L. Fleck (1935), *Entstehung und Entwicklung einer wissenschaftlichen Tatsache. Einführung in die Lehre vom Denkstil und Denkkollektiv* Schwabe und Co., Verlagsbuchhandlung, Basel (English translation: *The Genesis and Development of a Scientific Fact*, Chicago: University of Chicago Press, 1979)

- Bruno Latour and Steve Woolgar, (1979), *Laboratory life: The social construction of scientific facts*. London: Sage (2nd edition 1986)

- Nathan Rosenberg, 1982, *Inside the Black Box: Technology and Economics.* Cambridge: Cambridge University Press

- Derek J. de Solla Price, 1963, *Little Science, Big Science*, New York: Columbia University Press

- Robert K. Merton, 1973, *The Sociology of Science: Theoretical and Empirical Investigations*. Chicago: University of Chicago Press, esp. part 3, 4 and 5.

- Lewis Mumford, 1934, *Technics and Civilization*. New York: Hracourt, Brace, and World Inc.

- Michel Foucault, 1975, *Surveiller et Punir*. Parijs: Gallimard. Nederlandse vertaling 1989, *Discipline, Toezicht en straf: de geboorte van de gevangenis*, Groningen: Historische uitgeverij

- Latour, B. (1987). *Science in Action: How to Follow Scientists and Engineers through Society*. Cambridge, MA: Harvard University Press.

- Dosi, G., Freeman, C., Nelson, R., Silverberg, G., & Soete, L. (1988). *Technical change and economic theory*. London: Pinter.

- Hughes, T. P. (1983). *Networks of Power, Electrification in Western Society, 1880–1930*. Baltimore: Johns Hopkins University Press.

- W. Bijker, T. P. Hughes & T. J. Pinch (Eds.), (1987) *The social construction of technological system*, Cambridge: MIT Press.

- M. Douglas (1987), *How Institutions Think*, 1987, London: Routledge.

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Introductions

General introductions:

- Jasanoff, Sheila, Gerald E. Markle, James C. Petersen, and Trevor Pinch, eds. (1995). *Handbook of Science and Technology Studies*. London: Sage.
- E. Hackett, O. Amsterdamska, M. Lynch, J. Wajcman eds. (2007) *New Handbook of Science, Technology, and Society*, Cambridge: MIT Press.
- Bauchspies, W. K., Croissant, J., & Restivo, S. (2006). *Science, technology, and society: a sociological approach*. Malden, MA: Blackwell Publishing.
- Sismondo, S. (2004). *An Introduction to Science and Technology Studies*. London: Blackwell Publishers

Introductions into the "W of WTMC:

- Biagioli, M., 1999, The science studies reader, New York and London: Routledge.
- David J. Hess, 1997, Science Studies. An Advanced Introduction. New York: New York University Press.
- Rob Hagendijk, 1996, *Wetenschap, Constructivisme en Cultuur*. Amsterdam: Universiteit van Amsterdam. (in Dutch).
- Barry Barnes, David Bloor and John Henry, 1996, *Scientific Knowledge. A Sociological Analysis*. London: The Athlone Press.

Introductions into the "T" of WTMC:

- Wiebe Bijker and John Law (1992) - *Shaping Technology / Building Society: Studies in Sociotechnical Change,* Cambridge, MA: MIT Press.
- Donald MacKenzie and Judy Wajcman (Eds.) (1999) *The Social Shaping of Technology.* McGraw Hill Education (second ed., first edition 1985)
- Collins, Harry and Pinch, Trevor (1998) *The Golem at Large: What You Should Know about Technology* (Cambridge Cambridge University Press).

Introductions into the "MC" of WTMC:

- During, S., (ed.), (1993), *The Cultural Studies Reader*, London and New York: Routledge.
- Thomas Misa, Philip Brey & Andrew Feenberg (eds) (2003) , *Modernity and Technology*, Cambridge, MA: MIT Press.
- Latour, Bruno (2005) *Reassembling the Social: an Introduction to Actor-Network-Theory* (Oxford: Clarendon)
- Knut H. Sorensen and Robin Williams (Eds) (2002), *Shaping Technology, Guiding Policy: Concepts, Spaces and Tools*, Cheltenham, UK: Edward Elgar.

Research clusters

We think the various perspectives and themes within WTMC can be clustered into about 20 categories. See table. We also indicate the relative weight of the focus on Science (W), Technology (T) and/or Modern Culture (MC).

research cluster	focus on W, T or MC?
Sociology of science	W
Technology studies	T
Philosophy of science	W
Philosophy of technology	T
History of science	W
History of technology	T
Questioning modernity	MC
Innovation studies	T
Ethnography of science and technology	WT
Risk and uncertainty	TMC
Knowledge society	MC
Ethics of science and technology	MC
Cultural studies	MC
Governance of science and technology	WTMC
Public understanding of science and technology	WTMC
Technology assessment and participatory approaches	T
User studies	T
Scenarios and expectations	TMC
Sociology of health and the body	WTMC
Nature, space and environment	WTMC

research cluster	some key references
Sociology of science	Bloor, David, 1991 [1976] Knowledge and Social Imagery, Chicago: University of Chicago Press, 2nd edition.
	Pickering, Andrew (ed.), 1992, Science as Practice and Culture. Chicago: University of Chicago Press.
	Whitley, Richard, 1985, The Intellectual and Social Organization of the Sciences. Oxford: Oxford University Press.
Technology studies	MacKenzie and Wacjman, 1985 [2nd ed. 1999], The Social Shaping of Technology. Buckingham: Open University Press.
	Callon, M., 1986, 'The sociology of an actor-network: The case of the electric vehicle', in: Callon, Law and Rip (eds.), Mapping the dynamics of Science and Technology, pp. 77-102.
	Bijker, W.E., 1995, Of Bicycles, Bakelites and Bulbs: Towards a theory of sociotechnical change, Cambridge: MIT Press.
Philosophy of science	Gillies, Donald, 1993, Philosophy of Science in the Twentieth Century: Four Central Themes. Oxford: Blackwell
	Hacking, Ian, 1983, Representing and intervening: Introductory topics in the philosophy of natural science, Cambridge: Cambridge University Press.
Philosophy of technology	Val Dusek (2006) , Philosophy of Technology: An Introduction Blackwell Pub.
	Frederick Ferré (1995), Philosophy Of TechnologyUniversity of Georgia Press.
	Mitcham, Carl. (1994) Thinking through Technology: The Path between Engineering and Philosophy. University of Chicago Press. Chicago
History of science	Shapin, Steven, and Simon Schaffer, 1985, Leviathan and the Air-Pump. Princeton: University Press.
	Porter, T., 1995, Trust in numbers: The pursuit of objectivity in science and public life, Princeton University Press
History of technology	Merrit Roe Smith & Leo Marx (eds.),(1994) Does Technology Drive History? The Dilemma of Technological Determinism. Cambridge MA.: MIT Press
	Edgerton, D., 1999, 'From innovation to use: ten eclectic theses on the historiography of technology' History and Technology 16, pp.111-136.
	Ruth Oldenziel (1999) Making technology masculine. Men, women & modern machines in America 1870-1945, Amsterdam University Press
Critical approaches	Haraway, D.J., 1991, Simians, cyborgs, and women : the reinvention of nature, London : Free Association Books
	Latour, Bruno, 1993, We have never been modern, transl. by Catherine Porter. New York [etc.] : Harvester Wheatsheaf, cop. 1993. - Vert. van: Nous n'avons jamais été modernes. - Paris : La Decouverte, 1991.
	Misa, Brey & Feenberg (eds), Modernity & Technology, Cambridge, MA: MIT Press, 2003
Innovation studies	Garud, Raghu, and Peter Karnøe (eds.), (2001) Path Dependence and Creation. Mahwah , N.J.: Lawrence Erlbaum Associates.
	Utterback, J. M. (1996). Mastering the dynamics of innovation. Boston, Massachusetts: Harvard Business School Press.
	Coombs, R., Green, K., Richards, A., & Walsh, V. (2001). Technology and the Market. Demand, Users and Innovation. Cheltenham, UK: Edward Elgar.

Ethnography of science and technology	Collins, Harry M., 1985, Changing order: Replication and induction in scientific practice. London: Sage
	Knorr Cetina, Karin (1999), Epistemic Cultures. How the Sciences Make Knowledge. Cambridge: Harvard University Press.
	Hine, C. (2000). Virtual Etnography. London: Sage.
Risk and uncertainty	Ulrich Beck, 1992, Risk Society: Towards a new Modernity, Sage, London.
	Maarten Hajer, 1995, The Politics of Environmental Discourse: Ecological modernization and the policy process. Oxford: Clarendon Press.
	Jasanoff, S. 1990, The Fifth Branch: Science advisers as policymakers. Cambridge: Harvard UP.
Knowledge society	Gibbons et al., 1994, The new production of knowledge: the dynamics of science and research in contemporary societies. London, etc.: Sage.
	Beck, Giddens, Lash, 1994, Reflexive Modernisation: Politics, tradition, and esthetics in the modern social order. Cambridge: Polity Press.
	Castells, 1996 [second edition 2000], The Rise of the Network Society (The information Age, vol. 1), Cambridge: Blackwell Publishers.
Ethics of science and technology	Keulartz, J., M.Schermer, M.Korthals, T.Swierstra (Eds.) (2002). Pragmatist Ethics for a Technological Culture. Deventer: Kluwer Academic Publishers
	Mitcham, Carl, R Shannon Duval. (1999) Engineering Ethics. Prentice Hall. Upper Saddle River, New Jersey.
Cultural studies	During, S., (ed.), 1993, The Cultural Studies Reader, London and New York: Routhledge.
	DuGay, P., S. Hall, L. Janes, H. MacKay and K. Negus, 1996, Doing Cultural Studies – The Story of the Sony Walkman. London, Sage Publications.
Governance of science and technology	Sclove, R. (1995). Democracy and Technology. New York: Guilford Press.
	David Held, 1995, Democracy and the Global Order, Cambridge: Polity Press.
Public understanding of science and technology	Nelkin D. (1995), Selling Science. how the press covers science and technology Freeman Press, 1995
	Wynne, Brian (1996), "May the Sheep Safely Graze? A Reflexive View of the Expert-Lay Knowledge Devide."in Risk, Environment & Modernity: Towards a New Ecology/, edited by Scott Lash, Bronislaw Szerszynski, and Brian Wynne. London, etc.: Sage Publications, 44-83.
	Alan Irwin & Mike Michael (2003) Science, social theory & public knowledge, Milton Keynes: Open University Press
Technology assessment and participatory approaches	Rip, A., T. Misa & J. Schot, 1995, Managing Technology in Society, London: Pinter.
User studies	Oudshoorn, N., & Pinch, T. (2003). How Users Matter: The Co-construction of Users and Technology. Cambridge: MIT Press.
	M Lie & K Sorensen (1996) Making technology our own, domesticating technology into everyday life, Oslo: Scandinavian

	University Press
Scenarios and expectations	Brown, N., Rappert, B., & Webster, A. (2000). Contested Futures - a sociology of prospective techno-science: Aldershot.
Sociology of health and the body	Mol, A. (2002). The Body Multiple: Ontology In Medical Practice. Durham, NC: Duke University Press.
	Blume, Stuart, Insight and Industry. On the Dynamics of Technological Change in Medicine. Cambridge MA: MIT Press.
Nature, space and environment	Haraway, D. (1991). Simians, Cyborgs and Women: The Reinvention of Nature. New York: Routledge. P Macnaughten, J Urry Contested Natures - Sage: Thousand Oaks, CA, 1998
	Sarah Whatmore (2002), Hybrid Geographies: Natures Cultures Spaces, London: Sage.
	Peter Peters (2006), Time Innovation and Mobilities, London: Routledge

Some important WTMC Journals

WTMC scholars tend to write and read in the following journals (not complete):

- *Social Studies of Science*
- *Science, Technology and Human Values*
- *Science as Culture*
- *Research Policy*
- *Scientometrics*
- *Technology and Culture*
- *Krisis*(Dutch)
- *Economy and Society*
- *Sociology of Health and Illness*
- *Public Understanding of Science*
- *Technological Forecasting and Social Change*
- *Futures*
- *Science and Public Policy*
- *Theory, Culture and Society*
- *Genetics and Society*
- *Technology Analysis & Strategic Management*

Appendix: Annotations to the Core list of WTMC
May, 2009

CLASSICS

Merton – *The Sociology of Science*
Merton introduced concepts such as unanticipated consequences, self-fulfilling prophecy, middle-range theory, focused group interview and role-models. Within STS he is regarded as the founding father of social studies of science. In 'The Sociology of Science', Merton demonstrates the potential of seeing science no longer as the product of individual geniuses, but as the result of an institution pervaded by distinctive rules and as a community like any other kind of human community, with its own reward systems, career patterns and behavioral imperatives. By systematically studying the role of institutional norms in the scientific community, he defined the organizing principles of universalism, communism, disinterestedness and organized skepticism. Merton kept a clear distinction in place between the organization of science and the contents of the knowledge produced by it.

Kuhn – *Structure of Scientific Revolutions*
In this book, Kuhn argues against the view that scientific progress is linear. Instead, mature science develops through phases of "normal" science ("puzzle solving") and "revolutionary" science (transition from one paradigm to the next, brought on by uncertainty and crisis in existing theories). What ties members of scientific community together is not something external to their knowledge, but paradigms. With paradigms, Kuhn means dominant structures of thought and practices which define what questions can be asked, which vocabulary is to be used and what guidelines are to be followed for expanding knowledge, and which represent entirely different and incommensurate assumptions about the universe. Hence, sociology of science should also be sociology of scientific knowledge and Kuhn's book gave rise to the new sociology of scientific knowledge (SSK, strong program).

Mumford – *Technics and Civilization*
Mumford was a pioneer in the social study and constructive assessment of science and technology. He was one of the first writers to include 'machines and machine-makers', or 'technics' as he called it, as part of cultural history, giving rise to the field of study on history of technology. For him, the machine was as much an idea and ideal as a physical artifact. To understand technical change, Mumford combined cultural analysis with cultural ecology, history, geography and sociology. He analyzed the machine as having a life of its own, a life cycle in which technologies have reached potential maturity in the 20th century.

Foucault - *Surveiller et Punir*
Michel Foucault contributed to the sociology of knowledge by showing that what is considered "reason" or "knowledge" is itself subject to major culture bias. In his archeological and genealogical method, Foucault compares discursive formations of different periods to avoid a historiography that is based on the consciousness of individual subjects, and he explains causes of transition from one way of thinking to another as the result of contingent turns of history. Foucault is known for his critical studies of various social institutions, such

as psychiatry and medicine, and for his work on the history of sexuality. In surveiller et punir, Foucault describes present day society as a disciplinary society for the institutional formation of subjects, in which power and knowledge are inextricably linked. He argues that institutions such as the army, prisons, the factory and the school discipline the bodies of their subjects through surveillance techniques (real and perceived) and through application of historically produced norms of acceptable behavior. Through hierarchical observation, normalizing judgment and examination individuals are 'normalized', reformed to live by society's standards or norms.

Rosenberg – *Inside the Black Box: Technology and Economics*
Rosenberg explores the historical link between the economy and the determinants and consequences of technological change. In his book, he reviews and criticizes economic approaches for missing the complexity of the dialectic between science and technology, and for black boxing technologies to quantities and cost reduction in economic models. Rosenberg argues that the specific features of individual technologies should be taken into account: product innovations have shaped the rate of productivity improvement, the nature of learning processes underlying technological change, the speed of technology transfer, and the effectiveness of government policies that are intended to influence technologies in particular ways.

Dosi – *Technical Change and Economic Theory*
This book is one of the key-texts behind economic and innovation studies approaches within STS. Twenty eight articles and seven prefaces are presented to chart an alternative economic theory which treats both technical and institutional change as endogenous processes and in which technical change is neither seen as demand-induced nor as without any order. The chapters are divided into parts on shortcomings of established theory, national systems of innovation, international dimension and formal modeling. The authors aim to criticize mainstream economics for its incomplete view of technological change by introducing topics like path dependence, positive feedback, the influence of diverse social institutions and agent diversity.

Popper – *Conjectures and refutations*
"We learn from our mistakes" is probably the most influential adage in 20th Century philosophy of science, and is the leading thought in Poppers falsificationist program. C*onjectures and refutations* brings together a series of essays in which Popper relates his epistemological and social philosophical work.

Fleck – *Genesis and Development of a Scientific Fact*
Fleck's *Genesis and Development of a Scientific Fact*, originally published in German in 1935 is said to be the first sociology of science publication and has been of great influence on, amongst others, Kuhn and Merton. Fleck in this book introduces the concepts of the 'thought collective' and 'thought style' in a fascinating analysis of the development of the Wassermann reaction for the diagnosis of syphilis.

Latour & Woolgar – *Laboratory Life: The Social Construction of Scientific Facts*
Through (participant) observation at a laboratory of the Salk Institute for Biological Studies (USA), the first author followed closely the daily processes of scientific work –what scientists do and how and what they say– in order to unravel the social construction of scientific facts. This book is apart from being one of the first thorough anthropologies of science, rather

unique in the acknowledgement that the authors' account is also an example of a social construction of scientific facts.

Latour – *Science in Action*
This book gives a very vivid account of science and technology ('technoscience', as Latour calls it) in the making. By analysing the technoscience practice ('follow the actor') he describes what scientists and engineers actually do, the role of scientific literature, the activities of laboratories, the institutional context of technoscience in the modern world, and the means by which inventions and discoveries become accepted. Latour argues that the then common notion of 'diffusion' is not adequate to discribe this process of acceptance and, instead, analyses it as a translation process in which scientists and engineers try to enrol other actors.

Bijker, Hughes and Pinch – *The Social Constuction of Technological Systems*
This book contains a collection of papers first presented at a workshop at the University of Twente in 1984. It was one of the first international gatherings of researchers that were developing new approaches to analyse technical development in relation to its societal embedding. This meeting can be seen as one of he birthplaces of modern technology studies as an international community. The book contains early papers on the SCOT approach (Pinch and Bijker), Systems approach (Hughes) and Actor Network approach (Callon) along with many other studies that inspired later work in the field.

Thomas Hughes – Networks of Power
This book does two things. First, it provides an introduction to the analysis of Large Technical Systems. Central concepts to analyze such systems are 'momentum' (interdependencies in the system create a direction of developments that cannot easily be changed), 'reverse salient'. Second, it is a detailed reconstruction of the moves by which Thomas Edison succeeded in creating networks of (electrical) power.

Douglas – *How Institutions Think*
Instead of describing organisational decisions as the outcome of negotiations between powerful individuals within the organisation, Mary Douglas argues in her book (an anthropological study) that organisational decisions are largely shaped by the institutional 'culture'. In her terms, institutions exercise 'social control of cognition'.

INTRODUCTIONS

Sismondo – *Introduction STS*
This book provides an introduction into the major debates that have shaped STS. It deals with sociological questions as well as the philosophical issues (positivism, the Duhem-Quine thesis, falsification). The various standpoints in these debates are introduced, commented upon and illustrated with examples.

Bijker and Law – *Shaping technology/building society: Studies in sociotechnical change.*
This is the product of one of the famous Twente workshops which take place every few years. The Bijker, Hughes & Pinch (1987 – *Social construction of technological systems*) and Misa, Brey & Feenberg (2003 – *Modernity and Technology*) volumes are also the products of Twente workshops. This book has 10 chapters plus an introduction and a 'postscript' by Bijker and Law. This is where you will find Latour's descriptions of doors and keys and the

various ways responsibility and action can be delegated to both humans and non-humans. There is also an article by Akrich and one by Akrich & Latour together, which are both often cited in discussions of scripts, de-scription and in-scription.

MacKenzie and Wajcman – *The social shaping of technology*
The first edition of this book was one of the very first books to both introduce the 'social shaping' approach and to bring together important articles from a range of sources. The first edition has four parts. The first includes an excellent introductory essay by the editors together with four classic articles/extracts from books by Langdon Winner, Thomas Hughes, Ruth Schwartz Cowan and Cynthia Cockburn. The other three parts cover production, domestic and military technologies, including some older classic texts from Karl Marx and Harry Braverman as well as newer, more clearly STS texts. The second edition is similarly structured, though instead of a part devoted to domestic technologies there is one devoted to reproductive technologies. Eleven of the 30 chapters in the second edition are the same as the first edition. The new additions are indeed new, having themselves been published after the appearance of the first edition. These are both extremely useful edited collections, which include some familiar names but also ones likely to be less familiar. If you are ever teaching an 'introduction to STS' course, these would be good books to use for students unfamiliar with STS but able to read 'original' texts. The editors wrote a new introduction for the second edition which probably seemed like a good idea at the time. In retrospect, it probably wasn't necessary as the introduction to the first edition is much better and more substantive – setting out clearly different approaches to studying the technology-society relationship, explaining what technology is and how it should be understood as social. If you have the choice, read the introduction to the first edition.

Collins and Pinch – *The Golem at Large. What you should know about technology*
This is the second in a series of books – the first was about science (1993) and the most recent about medicine (2005). Collins and Pinch introduce the golem, a creature from Jewish mythology, made by humans of clay and water, an animated being that neither knows its own strength nor its own ignorance. The golem is used by Collins and Pinch as a metaphor for technology (and science and medicine), drawing attention to the ways in which technology is a product of human activities. Drawing on the STS tradition which focuses on controversies and failure (often associated with the Edinburgh Strong Programme, and Collins' interpretation of it), the book presents a series of case studies including the role of the Patriot anti-missile missile in the Gulf War, the Challenger space shuttle explosion, alternative airplane fuels, the Chernobyl nuclear disaster, economic modeling and the contribution of lay expertise to the analysis of treatments for AIDS. These latter two are particularly interesting, as the case study of economic modeling is a good example of using STS insights to look at something usually considered to be a social science, and the second because it prepares the ground for more recent work by Collins on expertise.

During – *The Cultural Studies Reader*
The *Cultural Studies Reader* offers a wide historical overview of original contributions by such writers as Barthes, Adorno, Lyotard, Stuart Hall, Bourdieu and Spivak (and many more), each with an introduction by the editor pointing at further readings, as well as a wealth of topics, ranging from the city to multiculturalism, to shopping centres and sports. During's introductory essay provides for a good overview of the field.

Misa, Brey and Feenberg – *Modernity and Technology*
Modernity and Technology provides for a collection of papers connecting modernity studies with the sociology and philosophy of technology, ranging from theoretical explorations in the first part to empirical studies in the second to political questioning of technology in the last.

Sorensen and Williams – *Shaping technology, guiding policy*
Shaping technology, guiding policy offers a collection of essays that both theoretically and empirically explore relations between technology and policy, bringing together STS and institutional economic perspectives. The book is written mainly by northern European authors (from the Scandinavian countries, the UK and the Netherlands) and contains a very useful glossary of theoretical concepts (including their origins and references).

WTMC Research Skills and Crafts
The Netherlands Research School of Science, Technology and Modern Culture (WTMC)

Introduction

This note is intended for WTMC PhD candidates, their supervisors, the coordinators of the WTMC PhD Training Program, and for a general audience interested in Science and Technology Studies' research and teaching in the Netherlands. This note focuses on the research skills and crafts provided by the WTMC Training Program, and is the counterpart of the note on WTMC Core Literature (available on the WTMC website, www.wtmc.net).

The WTMC PhD Training Program is an intensive trajectory that contributes both to the production of high quality dissertations and to the education of skilled, independent researchers in STS—including Innovation Studies. The priority of WTMC summer schools and workshops is the training of all-round STS researchers, but the production of dissertations also requires the support of the universities participating in WTMC. This is the *national component* of the training. The design and implementation of the *local component* is ultimately the responsibility of the university in which the PhD candidate is based.

The *national component* includes training in research skills and crafts that independent STS researchers require. It aims to *broaden* the students' knowledge of and experience with STS *research skills* as well as to provide critical reflection on when and how to apply such skills. The training program offers a two-year cycle of workshops and summer schools that focus on the key themes and methods of current STS research. The national component of WTMC is geared towards providing an overview and 'taste' of a range of methods rather than the details of each and every method which should be acquired in the learning-by-doing of each project, supplemented by additional training where necessary. Moreover, the dissertation days (in which dissertation chapters are discussed in small groups) in the final phase of the WTMC training create a safe environment for intensive feedback on written work and help to foster further a close-knit network of STS researchers. The dissertation days encourage PhD candidates to reflect on their (thesis-related) choices and to respond to feedback on their work, while the network functions as a group for mutual support and exchange of experiences, also later in the careers of the PhD candidates.

The national component broadens the PhD candidates' knowledge of research skills and helps them to reflect on these skills in four ways, by:
1. Introducing the main themes and theories of STS research [Table I]
2. Providing an overview and introduction in the key methods and methodologies of STS research [Table II].
3. Practicing the written and oral presentation of research, as well as the appropriate giving and receiving feedback on presentations [Table III]
4. Reflecting on the academic and professional development of the PhD candidates, and on issues relevant to the successful completion of a PhD, including reputation, motivation, ambition, relations with supervisors [Table IV]

The first two stress the broadening dimension of the research skills and crafts training (about two-thirds of the skills training effort in the workshops and summer schools). The last two

support self-reflection by PhD candidates (about one-third). In the next section, the four ways of training research skills and crafts are presented. The final section summarizes the division between the local and national components and provides an overview of a typical PhD trajectory and the skills and crafts that a PhD candidate can expect to acquire [Table V].

Crafts and skills addressed during the WTMC training program

The WTMC program includes training in skills and crafts that support the education of PhD students into independent STS researchers. This training has two dimensions: broadening the students' knowledge and experience of research skills, and reflecting on the appropriate use of these skills. The goals of 'broadening' are attained by introducing the students to the main themes of STS research, as well as by providing basic training in specific STS methods. Tables I and II (as well as Tables III and IV below) provide an overview of the **final attainment aims** of the WTMC training program, and how often we offer the training elements that actually help to reach the aims. These tables, as well as tables III and IV, are used by the coordinators when planning the workshops and schools, and inform the PhD candidates on what they may expect in terms of skills and crafts training during the program.

Table I (broadening): Introducing the main themes and theories of STS research

Acquiring in-depth knowledge of classic and contemporary insights in the relationships between science, technology and modern culture.	● ● ●
Developing the capacity to use this knowledge in one's own research	● ● ●
Acquiring insight into the development of STS as an interdisciplinary field in relation to its 'founding disciplines'	● ●
Acquiring the ability to recognize the societal and cultural aspects of one's research, and to connect these to results from STS	● ●
Acquiring the ability to apply results from STS to policy, management and design contexts	● ●

●　　　= every two years
● ●　　= every year
● ● ● = every workshop/summer school

Table II (broadening): Training in the key methods and methodologies of STS research

Developing knowledge of six key methods of STS: • interviewing • (participant) observation[1] • historical document analysis • citation analysis • discourse analysis • action research	●
Developing the ability to assess the appropriateness of different methods for different research questions	● ● ●

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[1] Interviewing and participant observation are key methods for ethnographic fieldwork.

In addition to broadening the PhD candidates' knowledge of STS literature and methods, the WTMC curriculum also aims to facilitate reflection by the PhD candidates on their own work, style and ambitions. This is elaborated in Tables III and IV.

Table III (reflection): Practising the written and oral presentation of PhD research

Developing writing skills (e.g. writing an outline for thesis, review, peer review report, abstract, article, and funding application)	● ● ●
Developing the oral skills to participate in academic debates in English	● ● ●
Developing the ability to develop and maintain (international) contacts in STS	● ●
Developing the oral skills to present one's research in English	●

Table IV (reflection): Academic and professional development

Acquiring the ability to situate one's research in the context of STS	● ● ●
Relating one's own work to one's ambitions and future prospects within and beyond academia, job orientation within and outside of academia, writing a *curriculum vitae*	● ●
Reflecting on learning processes during a PhD trajectory: iterative cycles, common pitfalls	●
Developing insight in and taking responsibility for one's own research process, and facilitating good supervision	●
Maintaining motivation and dealing with criticism	●
Recognizing one's professional responsibilities to society and the ethical dimensions of one's research	●

Overview of Skills and Crafts for a PhD track: The local component

This section provides an overview of the skills and crafts that are essential to learn or develop during the trajectory from PhD candidate to award of the PhD degree. It can serve as a checklist for PhD candidates and supervisors to see whether the student is on track in terms of developing research skills. The skills and crafts are presented by following the various phases of doing research and writing a thesis. Actual research practices often do not follow such a linear pattern, but the structure is convenient for the purpose of an overview.

In addition, a distinction is made between skills largely provided in the national component of the WTMC training program, and those that are primarily the responsibility of the local university. In the local component, the PhD candidate may acquire skills by following additional courses, but usually the student will learn-by-doing in the everyday practice of research, and in interaction with supervisors and colleagues. The WTMC wiki provides information on locally available courses such as literature retrieval, time management, academic writing in English, preparing for job interviews, and additional training in particular methods.

Table V: Overview of research skills and crafts: National and local components

Research skills & crafts	WTMC component	Local component
Formulating a research question		
Writing a research proposal, formulating research questions		X
Orientation to research topic & relevant literature		
Understanding one's empirical field of research		X
Acquiring an overview of STS theories & literature, positioning one's research (and its societal and cultural aspects) in terms of STS theories	X	
Choosing theories & literature relevant to research project		X
Linking empirical issues to theoretical ones	X	
Recognizing the ethical dimensions of one's research	X	
Fine-tuning research questions		X
Planning & formulating an approach		
Operationalising research questions		X
Understanding research as an iterative process	X	
Time management		X
Doing the 'actual' research		
Acquiring an overview of STS methods, positioning one's own methods within STS	X	
Choosing methods for empirical research, learning-by-doing particular methods in-depth		X
Linking empirical data to particular theories		X
Learning to listen to criticism and incorporating this in research	X	
Limiting the scope of research		X
Monitoring & reflecting on one's own progress, identifying gaps in skills/knowledge, learning to ask for supervision & advice	X	
Reporting & writing		
Writing a thesis outline	X	
Presenting research orally	X	
Writing different genres (e.g. review, peer review report, abstract, article, funding application)	X	
Acquiring the ability to apply results from STS to policy, management & design contexts	X	
Writing academic English		X
Ambitions, jobs & networking		
networking skills, asking questions at presentations/conferences	X	
Relating one's work to ambitions within & beyond academia, job orientation, writing a CV	X	

TRANSLATION AND SUPERVISION PLAN PHD STUDENTS WTMC[2]

OPLEIDINGS- EN BEGELEIDINGSPLAN PROMOVENDI WTMC

1. GENERAL DATA

Name PhD Student

………………………………………………………

Department

………………………………………………………

Faculty

………………………………………………………

University

…………………………………………..

Research Institute and Section

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………………………………………………………

Project Title

………………………………………………………

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[2] Most universities have their own format for the Training and Supervision Plan. The WTMC format is based on the examples WTMC considers to most practical and detailed, and can therefore be used as a 'best practice' sample. Promoters and PhD students can use it as an additional check for the arrangements made for training and supervision at their university.

Project Funding (University, NWO, EU, et cetera)

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…………………………………………………………

Supervisor-promotor(s), mandated supervisor and other members of supervising committee

1 ……………………………………………………

2 ……………………………………………………

3…………………………………………………….

4…………………………………………………….

Start of employment: [Date] …………………………………………

Factor of Working Hours: [0,8 mje of 1,0 mje]…………………………

End of employment: [Date]…………………………………………..

2. THE OBJECTIVE OF THE PHD APPOINTMENT

The aim of the appointment is to train the PhD student to do research that will result in a doctoral thesis. To achieve this objective, [Name University] commits itself to appoint the PhD student to a fulltime position for four years (or for five years in the case of a 0.8 position). Moreover, [Name University] commits itself to provide training and supervision within the framework of the PhD program as laid down in this plan. The PhD student commits himself/herself to carry out the tasks and duties tied to the appointment. At the end of the first year the student's work will be formally evaluated. In the case of a negative evaluation the [Name University] may decide to terminate the student's appointment prematurely.

3. GENERAL DESCRIPTION OF THE PHD STUDENT'S TASKS AND DUTIES

The tasks and duties of the PhD student involve research, training and teaching. Each year [per cent] of the workload consists of activities related to research and training, while on average [per cent][3] is devoted to teaching duties.

3.1 RESEARCH

The PhD student conducts scientific research and reports about the results in a doctoral thesis. A draft research plan is an integral part of this training and supervision plan, and should be added as appendix.

The topic of research for the doctoral thesis is:

…………………………………………………………………………………………………

…………………………………………………………………………………………………

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This project is part of or runs parallel to the research project(s):

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…………………………………………………………………………………………………

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3.2 TRAINING

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[3] In most universities, PhD students devote a maximum of 10-15 per cent of their employment time to teaching.

During the entire term of his/her appointment, the PhD student will devote on average [per cent][4] of his/her time to training-related activities. This percentage is likely to be slightly higher in the first two years of the term of the appointment and slightly lower in the last two years. This training is aimed at improving the academic and scholarly skills of the student. With regard to the training activities, the following agreements apply:

a) activities aimed at acquiring basic academic skills lacking in previous education[5]:

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b) activities aimed at study of specific literature and methods of the field, such as enrolling in classes and doing workshops in the context of (national) graduate research schools[6]:

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c) other options, such as doing courses at [Name University], attending lectures and seminars, and doing internships or paying visits to relevant institutions:

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d) participation in or attendance of conferences, symposiums, workshops and seminars. The PhD student is expected to attend at least two (preferably international) conferences and to present a paper at a conference at least once.

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3.3 TEACHING DUTIES

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[4] In most universities, PhD students are entitled to a training program that requires 12,5 per cent of their employment time.
[5] From 2007-08 onwards, WTMC offers first year PhD students enrolled in WTMC the option of doing one course at the level of one of the four STIS master programs organized by university institutes affiliated with WTMC. See for more information the WTMC Welcome Package and website: http://www.wtmc.net
[6] See for the WTMC program (4 workshops, 2 summer schools, and dissertation days, the WTMC brochure included in the WTMC Welcome Package)

The PhD student is to be charged with teaching duties within the department for a maximum of [per cent, see footnote 2] of his/her appointment. Initially, these duties consist as much as possible of well-defined tasks in terms of the amount of time they take, such as tutoring (preferably in a field connected to the research project). Later on, more elaborate teaching duties will follow, such as, for instance, course-planning activities and lecturing. In order to fulfil these teaching duties, the PhD student will receive a tutor training as soon as possible after the start of his/her employment.

4. SUPERVISION, EVALUATION AND ASSESSMENT

4.1 SUPERVISION

The supervisor(s) is (are) in charge of providing supervision to the PhD student and periodically meet(s) with the PhD student to discuss his/her research, training and other tasks. On average a supervisor is expected to spend one hour each week on a student's supervision. Supervisor(s) and student make clear agreements on mutual responsibilities, tasks to be performed, the frequency of their contact, and the reporting by the PhD student on his/her progress. In case of differences in the roles between the supervisor-promotor(s) and mandated supervisor, this should be clearly laid down in this plan. Concerning these aspects, the following has been agreed upon:

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4.2 PERIODIC EVALUATION

During the first and second year of the PhD appointment, the supervisor-promotor (first supervisor) formally meets once every six months with the PhD student to discuss and evaluate his/her progress, while during the third and fourth year they have such meetings once a year. At these meetings the PhD student will provide an overview of his/her activities related to research, teaching and training in the preceding period of time. The supervisor writes a formal report about these meetings that is signed by both the PhD student and the supervisor. One copy of this report will be sent to the personnel officer and one will be put in the student's file. It is important that this report includes specific information on any problems or difficulties, if relevant, relating to the PhD student's functioning and/or progress.

4.3 ASSESSMENT

At the end of the first year, the supervisor-promotor(s) and mandated supervisor(s) will have a formal assessment interview with the PhD student. A personnel officer will attend this interview.

For this interview, the PhD student prepares a document that lists and discusses:
  a. the various training activities attended and their results
  b. the research progress
  c. the teaching activities performed
  d. a revised research proposal with clear research questions, an account of the research methods used and a preliminary outline of the chapters of the doctoral thesis
  e. a detailed plan for the remaining three years with regard to research, training and teaching activities.

During the interview, the student's revised training and supervision plan (TSP) will be discussed as well. Based on the progress and results of the first year, the supervisor(s) will formally assess whether it is justified to expect that the PhD project will be successfully completed within the appointment's time frame. This assessment will be submitted in the form of an advice to the Dean. (For reporting about this assessment interview, see the form Assessment Interview PhD Student.)

At the assessment interview referred to in 4.3, a personnel officer is always present. At the formal evaluation meetings referred to in 4.2, a personnel officer is only present if there is reason to expect that the outcome will be negative or if one of the parties involved requests the presence of the personnel officer.

4.4 ADJUSTMENT OF TRAINING AND SUPERVISION PLAN

At the end of the first year, the student will adjust his/her training and supervision plan. This plan will apply to the remaining years of the appointment period and is subject to further adjustments at the end of each academic year. Potential changes or adjustments are added in an appendix to the Assessment Interview form and are signed by the supervisor(s) and the PhD student.

4.5 RELATIONSHIP OF TRUST

The first supervisor is the person primarily responsible for creating a relationship of trust with the PhD student. If a full professor acts as first supervisor (supervisor-promotor), the relationship of trust with the PhD student will be monitored by the Dean. The PhD student who is dissatisfied with his/her supervision and unable to discuss his/her concerns properly with his/her first supervisor should consult the personnel officer. If this does not solve the issue (for instance for reasons connected with the content of research), the PhD student should contact the Director of Research. The Director of Research is responsible for calling on department chairs with respect to the progress of the research of their staff members.

5   END OF THE APPOINTMENT

The PhD student's appointment will be concluded with a dissertation after four years in case of fulltime appointment (or after five years in case of a 0.8 appointment). At this point the PhD student may ask the Faculty or graduate research schools involved to issue a certificate

that includes specific data on the student's performance (for instance on his/her educational activities, teaching activities, research, publications etc). PhD Students that have been enrolled in the WTMC Training Program and have fulfilled all formal requirements (see the WTMC Brochure) will receive a WTMC certificate.

6 SIGNATURES

…………………………………………   ………………………………….

PhD student   Date

………………………………………….   …………………………………

1st supervisor   Date

…………………………………………   …………………………………

2nd supervisor   Date

…………………………………………   ……………………………..

3rd supervisor   Date

……………………………………..   …………………………………

Chair department   Date

……………………………………..   …………………………………

Personnel officer   Date

Please make a copy of this document after signing it and submit the original to the personnel officer. The PhD student, his/her supervisor(s) and the Director of Research will each receive a copy. One should also send a copy to WTMC (wtmc@maastrichtuniversity.nl).

Practicalities

In addition to the information provided in the brochure on the WTMC Training Program, there are some practicalities useful to know

WTMC and STS Master Programs
WTMC offers new and first year PhD students enrolled in the WTMC program the opportunity to do one course in one of the Science & Technology Studies and Innovation Studies (research)masters in the university institutes which participate in WTMC. These are the Msc program Philosophy of Science, Technology and society (PSTS) at Twente University, the Msc Program Science and Innovation Management (SIM) at Utrecht University, the MPhil Program Cultures of Science, Technology and Arts (CAST) at Maastricht University, and the MA European Program on Society, Science and Technology (ESST) at Maastricht University.

This will enable the students to meet particular deficiencies in their basic knowledge of STS, including Innovation Studies. It also facilitates students to get acquainted with STS programs at other universities than the ones they are affiliated with.

'Doing a course' in this case means that the students will attend the course, and write papers required by the course, but will not take any official exam or acquire any official ECTS credits. The coordinator of the course, however, will inform the promoter of the PhD student about the students' attendance of and contribution to the course, and will read and correct the papers of the students. PhD students can not do more than one course. The costs for travel and accommodation at the other university, as well as the costs for required course reading materials is the responsibility of the university with which the PhD student is affiliated. This means that attending a course always involves the approval of the promoter. Some of the programs have a maximum of one or two WTMC PhD students they admit per course.

Since the various Master programs are organized very differently in terms of length of the courses, number of meetings a week, schedules, use of literature, and syllabi, PhD students should always contact the coordinators of the Master programs in advance, preferably at least two months before the start of the course they aim to attend.

See for information about the STS Master Programs and the contact persons: the WTMC website (www.wtmc.net) under STS Master Programs, or contact wtmc@maastrichtuniversity.nl.

Attending and canceling workshops, summer schools and dissertation days
In order to receive the credit for attending workshops and summer schools, and thus the certificate for the full WTMC training program, you are required to be there for the entire event. If you think this may be a problem, contact the coordinator in charge of the event (Willem Halffman or Teun Zuiderent) well in advance.

If you have already registered for a workshop, school or dissertation day, but are, for whatever reason, unable to actually attend the event, please contact Marjatta Kemppainen or the coordinator in charge of the event (Teun Zuiderent or Willem Halffman) *as soon as possible*. We may then be able to offer your place to someone on the waiting list. Failure to

inform us (and ultimately the location of the event) may mean that WTMC is charged for (part of) the costs. In turn, your university may have to cover these costs.

The PhD students are charged 10 euro a day for lunch and dinner. They will receive a bill for these costs soon after the event. In the afternoon and evening, WTMC usually provides an opportunity to have some drinks together. Please write down your refreshments on the appropriate list and settle the bill before you leave at the end of the event, before leaving the location.

WTMC Annual Meeting
Each year, usually in November, WTMC has its annual meeting. Information on the program of the annual event will be provided through the Notes on WTMC, the WTMC listserv and the website (see below). PhD students are welcome to register for and attend these meetings.

WTMC website, WTMC list server and the Notes on WTMC
The WTMC website (http://www/wtmc.net) provides you with information on upcoming events, and has an archive with information on previous workshops, schools, and annual meetings. It lists all members of WTMC, as well as all PhD students, with a summary of their research topics and questions (see below). It also stores details on vacancies (at PhD, post-doc and senior level) at universities participating in WTMC.

In addition to the WTMC website, WTMC has a WTMC list server on which members can post relevant information on conferences, opportunities for funding, vacancies et cetera. For the PhD students, there is a distinct list server that informs students on whatever is relevant for their training.

About two times a year, the WTMC academic director sends out *Notes on WTMC* (an electronic newsletter) with details on upcoming events such as the annual meeting, new books and prizes, issues discussed at the WTMC Board, WTMC Training Committee and WTMC Research Committee. PhD students wishing to contribute to the newsletter, please contact the academic director of WTMC, Sally Wyatt (sally.wyatt@maastrichtuniversity.nl).

A summary of your research on the WTMC website
The WTMC website hosts an overview of all PhD students enrolled in the WTMC training programme. Please send us a summary of your research, using the following format:

Format PhD Project Descriptions WTMC (for website WTMC)

Contact Information
Name
Affiliation   (Example: Dep. of Technology & Society Studies,
                                                     Faculty of Arts & Culture, Maastricht University)
Affiliation Address   (Example: P.O. Box 616, 6200 MD Maastricht)
Phone Number
Personel Email address
Address Personal Website   (If available)

Background (max. 100 words)
Information on Bachelors Degree, Masters Degree, MA thesis, et cetera

Summary PhD Project (max. 300 words)
Title
Supervisor(s)
Content

Publications (if available)
Peer-reviewed, scholarly and professional publications

Wiki for WTMC PhD Students
Recently, WTMC PhD students have started a Wiki through which they communicate on and discuss relevant WTMC issues. See: http://www.wtmc.net/wiki (User name: wiki, password: STS is fun).

PhD representatives advising the WTMC Board and Training Committee
WTMC enables PhD students to advise WTMC on the WTMC training program and other issues in two ways. First, it has a two-year position for a PhD student-advisor in the WTMC Board. In previous years, PhD students have often implemented this position with two persons. As soon as the position is vacant, PhD-students will be informed about the procedure for candidacy. In addition, two PhD students are members of the WTMC Training Committee that advises the WTMC Board and coordinators on issues concerning the WTMC Training Program. Next to the Teaching Committee, WTMC has a Research Committee that advises the Board on the research program for WTMC staff members.

GJSS
WTMC is one of the many funding institutes of the Graduate Journal of Social Science (GJSS) in which many of our PhD students and staff participate. GJSS is an electronic journal that focuses on Interdisciplinary Social Science Research Methodology.

In Case of Problems
Should you encounter problems in your research or in writing your dissertation that cannot be solved by discussing these problems with your supervisors (which is, of course, always the preferred route) you can inform the coordinators about this. They can advise you about how to get on track again. In case of serious problems, they can, with your agreement, ask the academic director to mediate between you and your supervisors.

Certificates
PhD students will receive a WTMC certificate as soon as they have attended *4 three-day workshops & 2 five-day summer schools from the first phase of the PhD training*. External participants will receive a certificate for each distinct course, however, they can exchange these certificates for a certificate for the full program once they have met the requirements stated above with respect to the regular students. In practice, this means that external participants will have to hand in six certificates to obtain the certificate for the full program.

WTMC funding for dissertations
PhD students who have finished their dissertation are eligible for a WTMC grant of 500 euro partially covering the publication costs of their PhD thesis. The 500 euro will be granted to PhD students on the understanding that the student can show that the costs are over 500 euro, and that the WTMC training and funding is mentioned in the acknowledgements of the thesis. WTMC does not provide any funding to attend conferences. Please contact your supervisor, your university or NWO for conference attendance grants.

A Frequently Asked Question
Question: I would very much like to do a course in English language skills and writing, or a course in Statistics. Why does WTMC not provide such courses?
Answer: This is because PhD students participating in one of the academic groups affiliated with WTMC obtain their training locally, in their own institution, and nationally, from the Graduate Research School. The local component is provided by the local institution and in particular by the supervisor responsible for the PhD student. The local component includes supervision and the training to compensate for gaps in students' prior training, such as English Language Skills and Statistics. The national component is organised by the Graduate Research School WTMC. The national component aims to make students familiar with classical and recent theories, methodologies and approaches to studying the interaction between science, technology and society. It also stimulates interaction and learning among the PhD students of the School. Students may contact their supervisor for a course to compensate for gaps in their prior training.

Informatie voor begeleiders van promovendi en voor aspirant-leden van WTMC

Informatie voor begeleiders:

Procedure aanmelding promovendus

Wanneer een staflid van WTMC een promovendus voor de opleiding wil aanmelden, kan hij of zij contact opnemen met José Cornips (j.cornips@maastrichtuniversity.nl). Zij stuurt het WTMC lid dan het formulier voor het opleidings- en begeleidingsplan en informatie over de kosten toe. Nadat dit formulier is ingevuld en aan José Cornips is teruggestuurd, toetst de wetenschappelijk directeur of de betreffende promovendus een voor WTMC relevante vooropleiding heeft en onderzoek doet dat past binnen het onderzoeksprogramma van WTMC. Is dat het geval, dan krijgen de promovendus en zijn/haar begeleider een brief waarin gemeld wordt dat de promovendus is toegelaten. Aan deze brief wordt het introductiepakket toegevoegd. In principe kan een promovendus pas aan de opleiding deelnemen wanneer de promovendus binnen WTMC is toegelaten. Wanneer een promovendus in bijzondere gevallen zeer kort na aanstelling aan een universiteit al aan een WTMC-cursus wil deelnemen en de formaliteiten nog niet geregeld zijn, kan hij/zij voor een versnelde procedure contact opnemen met de directeur.

Speciale dagen voor begeleiders

WTMC organiseert tweejaarlijks een speciale Supervisors' Day. Deze dag is bedoeld om ervaringen over en tips voor de begeleiding uit te wisselen en om de directeur, de coördinatoren en het bestuur van WTMC van aanvullende ideeën over de opleiding te voorzien.

Informatie voor aspirant-leden van WTMC

Voorwaarden

Onderzoekers van wie het onderzoek op het terrein van WTMC ligt, kunnen een lidmaatschap van WTMC aanvragen. Zij zijn welkom tot de wetenschappelijke staf van WTMC toe te treden wanneer zij aan de volgende voorwaarden voldoen:

- Het aspirant-lid dient gepromoveerd te zijn
- Het aspirant-lid moet kunnen aantonen regelmatig nationaal en internationaal te publiceren op het terrein van onderzoek naar wetenschap, technologie en moderne cultuur. Deze publicaties moeten van wetenschappelijke kwaliteit zijn.
- Het aspirant-lid behoort, wanneer hij/zij universitair hoofddocent of hoogleraar is, blijk te geven van bekwaamheid in de begeleiding van promovendi
- Het aspirant-lid moet laten weten of hij/zij 'institutioneel' of 'individueel' lid wil worden. Voor een 'institutioneel' lidmaatschap komen die leden in aanmerking die werkzaam zijn binnen een instelling die al deelneemt aan WTMC, of binnen een instelling die heeft laten weten deel te gaan nemen aan WTMC. Een individueel lidmaatschap is alleen mogelijk wanneer het instituut waar de onderzoeker werkzaam is niet kan deelnemen aan WTMC, en de deelname van de individuele onderzoeker een meerwaarde oplevert voor de school
- Het aspirant-lid moet laten weten voor hoeveel onderzoeksformatie hij/zij in WTMC gaat deelnemen. De kleinst mogelijke deelname is 0,1 fte.
- Postdocs kunnen deelnemen voor de looptijd van hun aanstelling. Mede voor hen heeft WTMC het junior-lidmaatschap ingevoerd. Degenen die niet langer dan drie jaar geleden zijn gepromoveerd en werkzaam zijn bij een Nederlandse universiteit of onderzoeksorganisatie komen hiervoor in aanmerking.

Procedure

Wil een onderzoeker institutioneel lid worden en denkt hij/zij aan de voorwaarden te voldoen, dan dient hij/zij de decaan van zijn faculteit of, wanneer iemand niet aan een universiteit werkt, de directeur van zijn onderzoeksinstituut te vragen een brief met een verzoek tot lidmaatschap van de betreffende onderzoeker aan de directeur van WTMC te sturen. Deze brief bevat de informatie die onder 'voorwaarden' genoemd is, met het curriculum vitae van de onderzoeker als bijlage. De directeur beslist dan zo spoedig mogelijk of toelating mogelijk is en laat dit in een brief weten aan de onderzoeker en aan de decaan/directeur van de faculteit/het onderzoeksinstituut waar de onderzoeker werkzaam is. De directeur vermeldt dan ook bij welke van de drie onderzoekthema's de onderzoeker is ingedeeld. Deze thema's zijn:

(1) Diagnose van het Moderne Kennissysteem (o.l.v. prof. dr. Paul Wouters)
(2) Technologisch Cultuur en Maatschappelijke Regulering (o.l.v. Prof. dr. ir. Wiebe Bijker)
(3) Culturele Rollen van Wetenschap, Technologie en Rationaliteit (o.l.v. prof. dr. Hub Zwart)

Wil een onderzoeker individueel lid worden, dan volstaat een brief van de onderzoeker (met de onder 'voorwaarden' gevraagde informatie en een curriculum vitae van de onderzoeker) aan de directeur.

Kosten

Een aan WTMC deelnemende instelling betaalt een bepaald bedrag voor de infrastructuur van WTMC en verder 91 euro per 0,1 fte onderzoeksformatie. Een individueel lid betaalt 91 euro per 0,1 onderzoek. De kosten voor het junior lidmaatschap bedragen 200 euro per jaar. De kosten voor een promovendus zijn 1500 euro per jaar, of te wel 6000 euro voor de gehele opleiding. Voor de aanmelding van een promovendus geldt een aparte procedure.