



MIA Specialist Group

Open group meeting at Watermatex 2019

Dr Ingmar Nopens

(Full Professor & **Chair of MIA SG**)



BIOMATH



inspiring change



AGENDA



- Introduction
- Group organization and composition
- Activities
 - Associated YWP initiatives
 - Task Groups and Working Groups
 - Webinars
 - Conferences
 - Others
- Election new management committee members

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MIA SPECIALIST GROUP



*“This group targets people from research, consulting companies, institutions and operators to think along **the use of models and computing tools to support the understanding, management and optimization of water systems.**”*

PRIORITIES

- Stimulate interaction and knowledge transfer in the domain of modelling and integrated assessment
- Interact with other IWA SGs and other academic/professional organisations

How to find us



Website: <http://iwa-mia.org/>



Website: <http://iwa-mia.org/>

<https://iwa-connect.org>

GENERAL ACTIVITIES OF MIA MC



- Spread information of the Group's activities and developments
- Convene conferences and arrange workshops
- Initiate research and case studies
- Stimulate initiation and host Task Groups and Working Groups
- Interact and streamline activities with other IWA SGs, as well as with other academic and professional organisations
- Start SG-internal committees on specific emerging topics of interest
- Work for the benefit of our members, assist IWA HQ on issues

ORGANISING THE WORK WITHIN MIA



- Monthly electronic MC meetings (1 hour)
- Tri-monthly focused YWP meetings + mentoring
- Open MIA SG meeting at major conferences (1/yr)
- Closed MIA MC meeting at major conferences (1/yr)
- No newsletter! (few read the 40+ pages)
- Posting news on IWACConnect
- Create open MIA website for non-IWA members
- Close collaboration with IWA HQ, IWA SC2SG and IWA Learn

ORGANISING THE WORK WITHIN MIA



- Strong focus on TGs and WGs
- Organise conferences and workshops (IWA/MIA events)
- Organise workshops or sessions at non-IWA/MIA conferences (SETAC, IFAC)
- Organise webinars
- **Create friendships**
- **Remember face-to-face social activities**

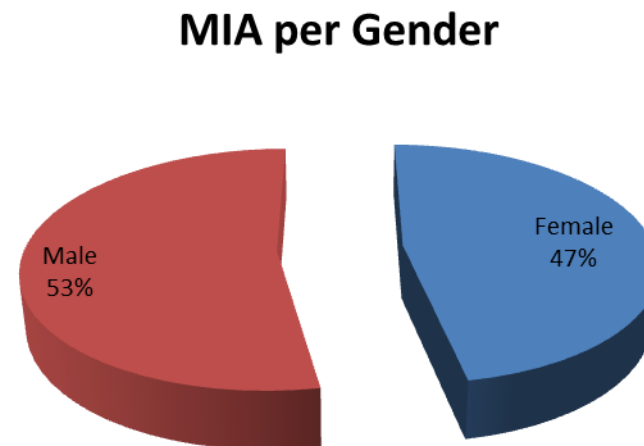
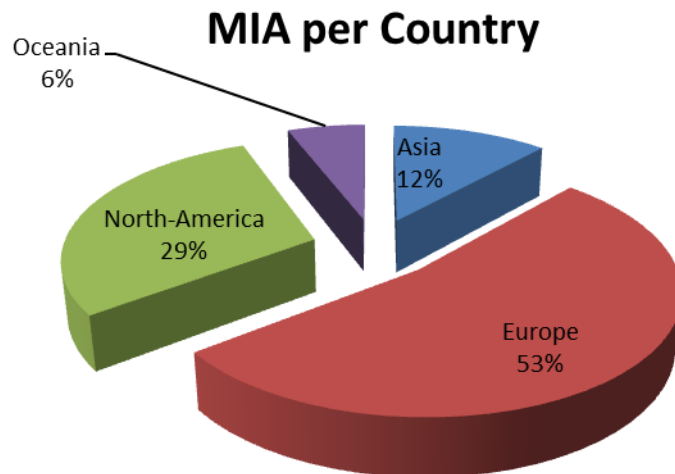
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MIA MANAGEMENT COMMITTEE

- “Time is the enemy” – ALL SG WORK is VOLUNTARY!
- Dedicated MC members essential



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- “Time is the enemy” – ALL SG WORK is VOLUNTARY!
- Dedicated MC members essential
- MC: 14 senior members & 14 **associated YWPs** working in teams

- **MC** more **ACTIVE** and **DYNAMIC**
- Higher work **CAPACITY**
- Create **OPPORTUNITIES** for YWPs

Across
13 Countries
21 Institutions



PHILOSOPHY ASSOCIATED YWPs



Active program to fully engage, mentor and involve YWPs

- Every “full” MC member teamed up with associated YWP
- Teams made up from different research groups
- Senior MC members take on mentoring role
 - Train YWPs in leadership
 - Actively involve them in MC activities
- Associated YWPs can grow into full members if place opens up
- This innovative approach was showcased during leader’s forum at WWC2017!

MANAGEMENT COMMITTEE

Associated YWPs

☐ Albert Guisasola	(Webinar Coordinator)	Izaro Lizarralde
☐ Andy Shaw	(Industrial Insight Officer)	Arifur Rahman
☐ Elena Torfs	(Administrative Coordinator)	Jing Sun
☐ Paloma Grau	(TG and WG Coordinator)	En Shi
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Ingmar Nopens
(Chairman)

BIOMATH, Ghent University
ingmar.nopens@ugent.be

Associated YWP:

Julia Ledergerber



Ulf Jeppsson
(Vice Chairman)

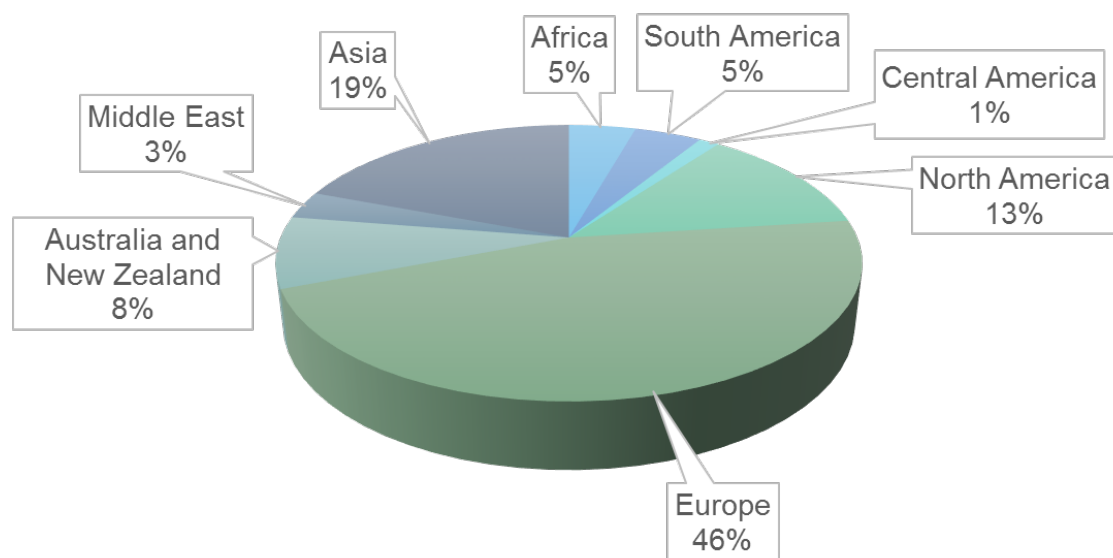
IEA, Lund University
ulf.jeppsson@iea.lth.se

Associated YWP:

Jorge Santos

MIA GROUP MEMBERS

- 1845 members (according to IWAconnect)



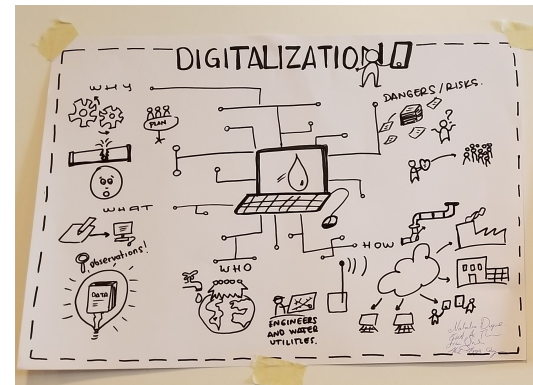
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INITIATIVES OF ASSOCIATED YWPs

- TG/WG liaisons: YWPs form direct link between MC and TG/WGs
- 3-monthly separate YWP meeting discussing ongoing activities and new initiatives + mentoring
- Organization of workshops
 - Integrated modelling workshop at YWP conference Toronto
 - YWP workshop at Watermatex 2019



INITIATIVES OF ASSOCIATED YWPs



- Driving force behind organization of MIA webinars
- Identify collaborations with other SGs – road-map created through analysis of Global Trend Report
- Read more about the affiliated YWPs' activities in their [blog post!](#)



TASK GROUPS AND WORKING GROUPS



- Strong focus on TGs and WGs
- YWP liaisons to all TGs and WGs
- Request on our TGs: report on progress, update website etc
- Dedicated IWAconnect subpages for each TG and WG

TASK GROUPS AND WORKING GROUPS



Task Groups (TGs)

- Benchmarking of Control Strategies for WWTPs (BSM), chair Ulf Jeppsson (Finished)
- Good Modelling Practice (GMP), chair Leiv Rieger (Finished)
- Design and Operations Uncertainty (DOUT), chair Lina Belia – Liaison Julia Ledergerber (Finishing)
- Generalised Physico-Chemical Modelling (PCM), chair Damien Batstone – Liaison Kimberly Solon (Finishing)
- Use of Modelling for Minimizing GHG Emissions from Wastewater Systems (GHG), chair Jose Porro – Liaison Christine Polo
- Membrane Bioreactor Modelling and Control, chair Giorgio Mannina – Liaison Jing Sun (NEW)

Working Groups (WGs)

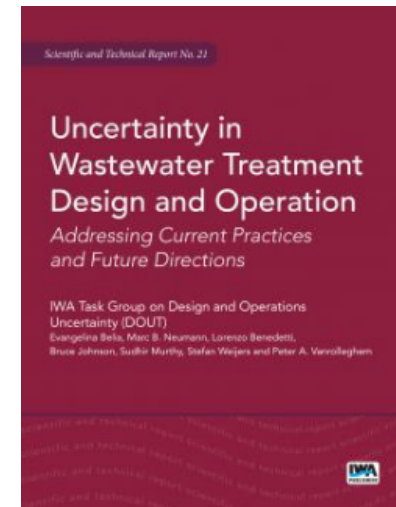
- Integrated Urban Water Systems (IUWS), chair Peter Bach – Liaison Sovanna Tik
- Computational Fluid Dynamics (CFD), chair Julien Laurent – Liaison Chaim De Mulder
- Life Cycle Analysis (LCA), chair Lluís Corominas – Liaison En Shi
- Good Modelling Practice (GMP), chair Guenter Langergraber (NEW)
- Disinfection and AOP Modelling, chair Domenico Santoro (Upcoming)

IDEAS for NEW TGs or WGs?

TG: Design and Operations Uncertainty

(**Chair:** Lina Belia – **Liaison:** Julia Ledergerber)

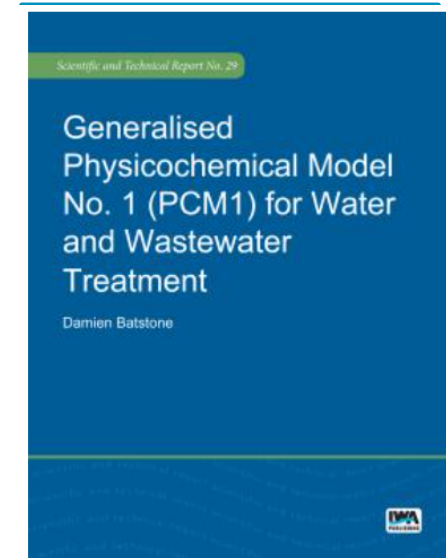
- **Goals:**
 - Increase efficacy and transparency of wastewater infrastructure (design/operations) via the use of numerical simulation with statistical analysis
- **Activities**
 - Workshop during Watermatex 2019
 - Webinar February 6, 2018
 - STR in editing process! To be published June 2020
 - Application to new case-study on ammonia removal performance



TG: Generalized Physicochemical Framework

(**Chair:** Damien Batstone – **Liaison:** Kimberly Solon)

- **Goals:**
 - Develop a physicochemical framework with high predictive capacity that is usable across the range of unit operations by both modelers and end-users
- **Activities:**
 - STR under preparation. Publication foreseen 2020



TG: Modelling of GHG emissions

(Chair: Jose Porro – Liaison: Christine Polo)

- Goals:

- Understand the processes that are responsible for the major contributions to GHG emissions from WWTPs and sewer systems
- Translate this knowledge into mathematical models

- Activities:

- Development of an N₂O Field Measurements Guide
- STR under preparation. Publication foreseen 2020

TG: MBR modelling and control

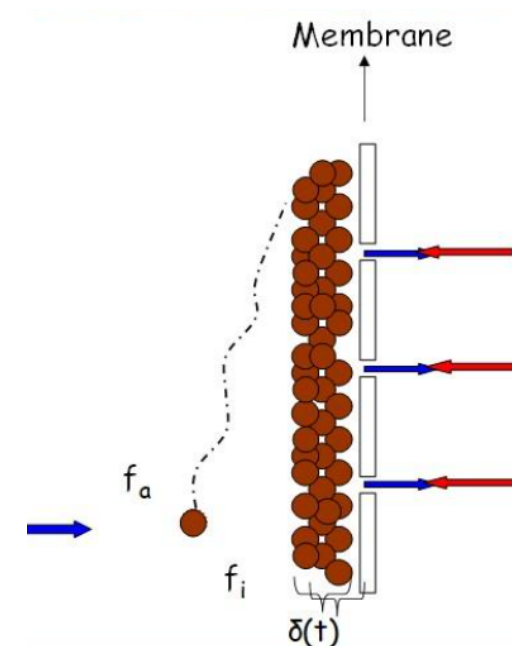
(Chair: Giorgio Mannina – Liaison: Jing Sun)

■ Goals:

- Propose standardized criteria to integrate biological, filtration and energy models for modelling of MBR-based systems.
- Set-up a database that can be used for plant-wide modelling, control and optimization of MBR-based systems.

■ Activities

- Workshops during UDM 2018 and Watermatex 2019
- Special session during 9th IWA-MTC conference 2019



WG: Integrated Urban Water Systems

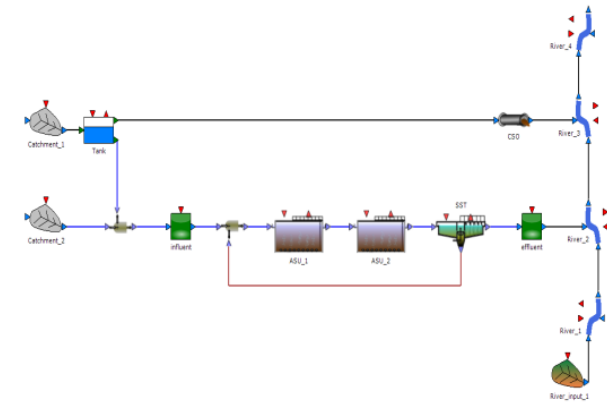
(Chair: Peter Bach – Liaison: Sovanna Tik)

■ Goals:

- Integration of models of all components of the water cycle in urban areas including the nutrients and energy cycles

■ Activities:

- Creation of an IWA *WaterWiki* group and a LinkedIn Group for dissemination
- Webinar September 26, 2017
- Organization of workshops in Watermatex2015, Urban Drainage 2015, YWP Conference 2019
- *Upcoming*: Junior scientist workshop 2020
- *Upcoming*: White paper on barriers to integrated modelling



IWA MIUWS Working Group

[MENU](#)

About MIUWS

[Home](#) » [About MIUWS](#)

Both policy makers and industry are increasingly realizing the necessity to adopt an integrated approach to water management. In Europe, this is clearly stated in the Water Framework Directive, and by the recent funding of large research projects on that topic (e.g. PREPARED, SANITAS, TRUST). In North America, recent activities confirm this direction, e.g. the USEPA's Integrated Planning and Permitting Initiative and integrated planning framework, two new WERF Research Challenges: "Linking Contaminant Sources to Receiving Water Impacts" and "Sustainable Integrated Water Management". Other areas in the world are already following closely. IWA has launched the "Cities of the Future" programme, which has strong integration components.

Website:

<http://miuws.org/index.php/sample-page/>

WG: Computational Fluid Dynamics

(**Chair:** Julien Laurent – **Liaison:** Chaim De Mulder)

■ Goals:

- Develop guidance documents and hands-on training for good modelling practice in CFD for wastewater treatment modelling
- Consensus building on state-of-the-art knowledge gaps and future needs

■ Activities:

- Workshop during Watermatex2019, WRRmod2018 and WEFTEC 2017
- Webinar February 5, 2019
- Scientific and technical report in preparation
- Position paper in preparation



WG: Life Cycle Analysis

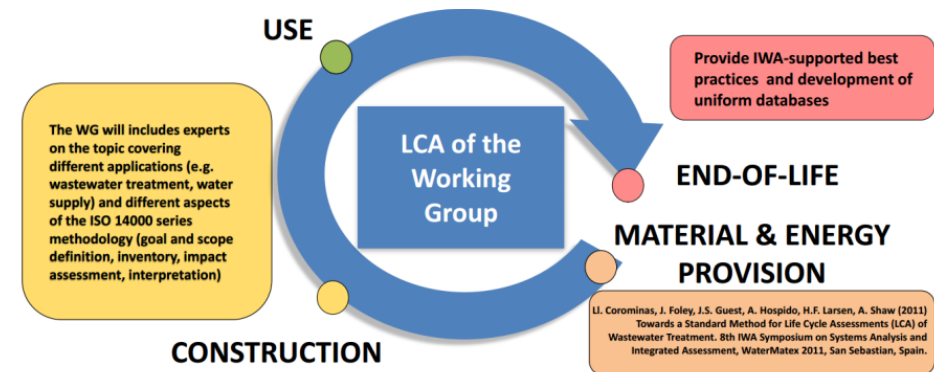
(Chair: Lluís Corominas – Liaison: En Shi)

■ Goals:

- To facilitate the exchange of ideas and develop consensual methodologies, in order to promote better use of LCA in the urban water systems

□ Activities:

- Workshop during Watermatex 2019
- Preparation white paper “Life cycle assessment applied to wastewater treatment: an operational guide”



MIA WEBINARS



1. **Overcoming data issues and barriers to integrated modelling in practice – September 26, 2017 – 225 registered attendees**
2. **Modelling resource recovery: state of the art and future challenges – February 6, 2018 – 461 registered attendees (an IWA record!)**
3. **New advanced in advanced biological phosphorous removal – July 9, 2018 – 250 registered attendees**
4. **Computational Fluid Dynamics: Applications and good modelling practice – February 5, 2019 – 380 registered attendants**
5. *In preparation: Disinfection modelling – October 24, 2019*
6. *In preparation: AOP modelling – November, 2019*

CONFERENCES



- WRRmod conference series ([WRRmod2020](#), [WRRmod2022](#))
- Watermatex conference series ([Watermatex2023](#))
- [NEW](#): proceedings and poster publications available on IWAconnect
- Joint session MIA - SETAC 2017



SETAC – MIA JOINT SESSION

- At 27th annual meeting of SETAC in Brussels 2017
- **Goal:** Explore the links between MIA and SETAC's diverse Advisory Groups
- **Key topics:**
 - Coupling fate of chemicals to effects on receiving waters
 - Life cycle assessment methodologies
 - Policy making around European environmental Directives (e.g. Water Framework Directive)



OTHER



- MIA Specialist Group's YWPs showcased during the SG Leaders Forum (Buenos Aires, November 2017)
- Steering committee member to [IWA digital water program](#)
- IWA Global Trend Report 2020: emerging topics in modelling and integrated assessment

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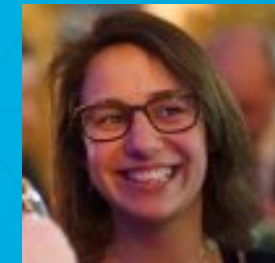


Ulf Jeppsson
(Chairman)

IEA, Lund University

Associated YWP:

Julia Ledergerber



Elena Torfs
(Vice Chair)

BIOMATH, UGent

Associated YWP:

Jorge Santos

ELECTION OF NEW MC MEMBERS



- Call for applications is open!
 - Full MC members
 - Associated YWP members
- Application: [instructions](#) on IWAconnect
- Selection: electronic voting by full MC members
- Evaluation: Feedback survey organized after 1 year to evaluate YWPs experience with respect to mentoring, collaboration, activities, learning aspect, communication...



for your attention!

Open for questions!



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Dr Ulf jeppsson

(New chair of MIA SG)



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