

# BPM NEWSLETTER

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## EDITORIAL

Seville is calling! As a tradition, the February edition of the BPM Newsletter puts in the center the host city and everything you need to know about this year's conference. Take-home messages are an open science principle in the main conference, excellent keynote speakers, a diverse set of workshops with different perspectives on BPM, a new forum on robotic process automation and the charming atmosphere of the historic city of Seville.

Stefanie Rinderle-Ma has interviewed Marlon Dumas on the background and content of the ERC grant that he was awarded recently. ERC grants are among the most competitive research grants in Europe; it is a huge success for Marlon for which we congratulate him warmly. To some extent, the award is also an acknowledgement of the relevance of BPM research in general.

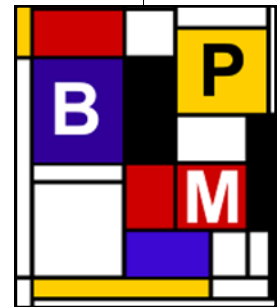
Barbara Weber has prepared a report about the ISA

research group in Seville, so that you are introduced to the people who make BPM 2020 happen.

Let me also point you to the second edition of our sister conference, the International Conference on Process Mining, ICPM 2020, which takes place in Padua, Italy, in October. Looking forward to an exciting conference year 2020!

Thanks for supporting the BPM newsletter, and happy reading!

Mathias Weske



1st BPM 2003 Eindhoven  
2nd BPM 2004 Potsdam  
3rd BPM 2005 Nancy  
4th BPM 2006 Vienna  
5th BPM 2007 Brisbane  
6th BPM 2008 Milan  
7th BPM 2009 Ulm  
8th BPM 2010 Hoboken  
9th BPM 2011 Clermont-Ferrand  
10th BPM 2012 Tallinn  
11th BPM 2013 Beijing  
12th BPM 2014 Haifa/Eindhoven  
13th BPM 2015 Innsbruck  
14th BPM 2016 Rio de Janeiro  
15th BPM 2017 Barcelona  
16th BPM 2018 Sydney  
17th BPM 2019 Vienna  
18th BPM 2020 Seville  
19th BPM 2021 Rome



# WELCOME TO BPM 2020 — WELCOME TO SEVILLE!

According to legend, Seville was founded by Hercules and its origins are linked with the Tartessian civilisation. It was called Hispalis under the Romans and Isbiliya with the Moors. The high point in its history came following the discovery of America in 1492, when the House of Trade was established in Seville to monopolize all trade with America. In Seville, you will breathe history in every corner. Visitors will not want to miss the Giralda tower and the Cathedral, which is the largest Gothic church in the world. Very close by are the royal Mudéjar palace known as the Alcazar with marvellous gardens, and the General Archive of the Indies, where the historical records of the American continent are kept. These three UNESCO World Heritage Sites and many other corners of the old town have fascinated people for centuries. This is one of the reasons that Seville has inspired many operas like Carmen, Don Giovanni or Figaro.

One of these corners is the BPM venue: the former Royal tobacco factory. It's a building made of stone during the 18th century as the first tobacco factory established in Europe. It is one of the most splendid representations of the industrial architecture of the Old Regime. Inside, there are a number of small, but often beautifully decorated courtyards with marble fountains. In the middle of the 20th century it was decided to use the historic building, after a transformation, as the headquarters of the University of Seville.

For those of you who are curious about the social events, here are some highlights to get you started. We will be delighted with a guided visit to the Real Alcazar of Seville, originally developed by Moorish Muslim Kings and renowned as one of the most beautiful in Spain. Its upper levels are still used by the royal family as the official Seville residence, making it the oldest royal palace still in use in Europe. The Alcazar palace complex also boasts beautiful, extensive gardens: from Moorish, to Renaissance style, with many ponds, exotic trees, shady footpaths and pavilions.

We will not be disappointed with the conference dinner. Abades Triana restaurant, located on the banks of the



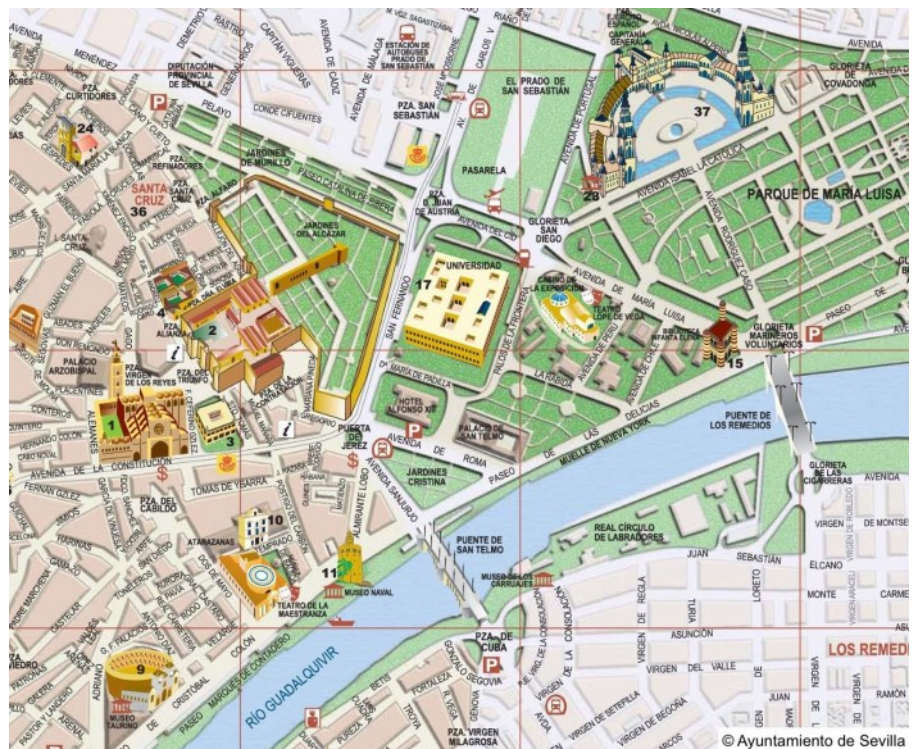
Guadalquivir River, will delight us with avant-garde Andalusian cuisine with traditional flavours and touches of innovation, while we enjoy stunning views of the river and some landmarks of Seville as the Torre del Oro, the Giralda and the Maestranza bullring.

Daily meals won't go unnoticed either. We will have the pleasure of taking a break and having lunch in La Raza restaurant, located inside the María Luisa Park, just 3 minutes walking from the conference venue. This park is the prin-

cipal green area in the city center and home to many monuments like the magnificent Plaza de España and to numerous ponds and fountains.

Finally, if you want to extend your visit for a few days, you have plenty of options like visiting one of the fantastic beaches that are within one and a half hour driving from the city, a sherry bodega, or the Roman city of Italica.

Manuel Resinas (BPM'20 General Co-Chair)





# A MESSAGE FROM THE BPM 2020 PC CHAIRS

The BPM 2020 main conference is organized in three complementary tracks, covering different perspectives into the BPM discipline and different research methods.

Track I invites papers that follow computer science research methods. This includes papers that investigate the foundational principles of BPM systems, theories, algorithms, languages, and methods for modeling and analyzing business processes. This track also covers papers on novel architectures and concepts underlying process-aware information systems, as well as papers that use conceptual modeling techniques to investigate problems in the design and analysis of BPM systems. Papers in Track I are evaluated according to computer science standards, including sound formalization, convincing argumentation, and, where applicable, proof of concept implementation, which shows that the concepts can be implemented as described.

Track II invites papers that focus on engineering aspects of information systems research. The focus is on the investigation of artifacts and systems in business environments. Papers in this track are expected to have a strong empirical evaluation that critically tests criteria like usefulness or added value of the proposed artifact. This track covers business process intelligence, including process mining techniques, and the use of process models for enactment, model-driven engineering, as well as deployment architectures. Empirical evaluations are important to show the merits

of the artifact introduced. Where applicable, artifacts should be compared to state-of-the-art in a reproducible manner.

Track III invites papers that aim to advance our understanding of how BPM can deliver business value or competitive advantage, for instance by developing capabilities to improve, innovate, or transform organizations or to tackle the challenges and opportunities of digitalization. Papers that study process thinking, organizational routines, process innovation, and the application and impact of BPM methods and tools in use contexts based on empirical observation are highly welcome, too.

Areas of interest include a wide range of capability areas that are relevant for BPM. Papers will be evaluated according to management and information systems research standards.

Authors of selected papers will be invited to submit an extended version of their papers to special issues in Elsevier's Information Systems (Tracks I and II) and in Springer's Business & Information Systems Engineering (Track III).

This year, the BPM conference will explicitly encourage authors of research papers to follow the principles of transparency, reproducibility, and replicability. In particular, the conference will encourage authors to disclose anonymized and curated datasets in order to increase reproducibility and replicability.

The conference will continue with its tradition of hosting the BPM Forum

alongside the main conference. The BPM Forum is a venue for research papers that explore innovative research directions, which need time to reach the level of maturity of more established research topics.

The conference will also feature several workshops, tutorials, a demo track, an RPA Forum, a Blockchain Forum, and an Industry Forum, altogether offering a rich, diverse, and exciting program.

Keep in mind the following deadlines:

- 16 March 2020 — Paper submissions to main conference tracks (strict)
- 6 April 2020 — Tutorial submissions
- 10 April 2020 — Submissions to Industry Forum
- 4 May 2020 — Nominations for BPM Dissertation Award
- 24/31 May 2020 — Abstract/Paper submissions to Blockchain Forum and RPA Forum
- 29 May 2020 — Submissions to BPM workshops
- 1 June 2020 — Submissions to doctoral consortium
- 15 June 2020 — Submissions to Demo Track
- 13-18 September 2020 — BPM 2020 Conference and Co-Located Events

Further details can be found at <https://congreso.us.es/bpm2020/>

Marlon Dumas (BPM 2020 Consolidation Chair)



# BPM 2020 WORKSHOPS: NOW IT'S UP TO YOU!

Also in 2020, the BPM conference features a number of workshops dedicated to particular areas of business process management. While the main conference focuses on finished and mature work, workshops aim to attract papers that present novel ideas and preliminary research. The idea is to engage a select community and to provide a forum for interesting discussions and inspiring new research.

A large number of workshop organizers have made the effort of proposing a workshop for the BPM conference. This year we deliberately limited the number of workshops in order to increase the participation and level of interaction per workshop. For you, as a researcher in the area of BPM, this is the ultimate opportunity to submit, present, and discuss your preliminary work in an a focused and interactive session. What is more, it will enable you to further develop your ideas together with fellow researchers from around the world. The workshops will take place on Monday, September 13, right before the

main conference. We are happy to announce that BPM 2020 can again offer a rich spectrum of workshops reaching out into neighboring domains:

- Workshop on Security and Privacy-enhanced Business Process Management (SPBP'20)
- Workshop on Social and Human Aspects of Business Process Management (BPMS2'20)
- Workshop on Business Processes Meet the Internet-of Things (BP-Meet-IoT)
- Workshop on Artificial Intelligence for Business Process Management (AI4BPM)
- Workshop BPM in the era of Digital Innovation and Transformation (BPMinDIT-2020)
- Workshop on Business Process Intelligence (BPI'20)
- Workshop on DEClarative, DECision and Hybrid approaches to processes (DEC2H 2020)



Submission deadline is May 29, 2020.

More details can be found on <https://congreso.us.es/bpm2020/workshops/>. We are looking forward to your submissions!

Adela del Río Ortega, Flavia Santoro, Henrik Leopold (BPM 2020 Workshop Chairs)





# EXCITING KEYNOTES AT BPM 2020

In the tradition of our conference series, BPM 2020 features three top-notch keynotes with different perspectives on business process management.

**Rama Akkiraju** is an IBM Fellow, Master Inventor and IBM Academy Member, and a Director in IBM's Watson Division where she leads the AI operations team with a mission to scale AI for Enterprises. Rama also heads the AI mission of enabling natural, personalized and compassionate conversations between computers and humans. Rama has been named by Forbes as one of the Top 20 Women in AI Research in May 2017, has been featured in A-Team in AI by Fortune magazine in July 2018 and named Top 10 pioneering women in AI and Machine Learning by Enterprise Management 360.



In her career, Rama has worked on agent-based decision support systems, business process management, electronic market places, and semantic Web services, for which she led a World-Wide-Web (W3C) standard. Rama served as the President for ISSIP, a Service Science professional society for 2018 and continues to actively drive AI projects through this professional society. She will talk about „How to infuse AI into Business Processes? A practitioner's perspective on best practices“.

**Avigdor Gal** is a Professor of Information Systems, Technion – Israel Institute of Technology. His research interests in the world of process management and mining include the use of low-level data



signals to process discovery, process matching, and improvements to the performance of processes with scarce resources. He co-authored the paper "Complex Event Processing over Uncertain Data", which received the test-of-time award in DEBS 2018. Prof. Gal serves in various editorial capacities for periodicals and has helped organize professional workshops and conferences. He has won IBM, Accenture, and JP Morgan Faculty Awards, the 2011-13 Technion-Microsoft Electronic Commerce Research Award, and the 2012 Yanai Award for Excellence in Academic Education.

He will talk about „Perspectives in Process Mining: Closing the Big Data Gap“. The discipline of process mining was inaugurated in a world of small(er) data, with roots in the communities of software engineering and databases. The introduction of big data, with its volume, velocity, variety, and veracity

poses new challenges to this research field. In this talk Avi will position process mining along modern data life cycle, highlighting the challenges and suggesting directions in which AI in general, and machine learning in particular may interact with a renewed process mining agenda.

**Jan vom Brocke** is the Hilti Chair of Business Process Management, University of Liechtenstein.



Jan has more than 15 years of experience in IS research, teaching and practice and has published more than 200 papers in, among others, MIS Quarterly (MISQ), Journal of Management Information Systems (JMIS) and Information & Management (I&M). He is author and editor of 19 books, including the International Handbook on Business Process Management (together with M. Rosemann). He serves on the editorial review board of the Journal of the Association for Information Systems (JAIS) and is an associate editor of Business & Information Systems Engineering (BISE) and co-editor-in-chief of the Journal of Information Technology Theory and Application (JITTA). He will talk about „Towards Process Science: Embracing Interdisciplinary Research Opportunities for BPM in the Digital Age“.

Marlon Dumas

# INTERVIEW WITH MARLON DUMAS

The European Research Council (ERC) provides significant funding schemes for excellent and groundbreaking research (<https://erc.europa.eu/>). For experienced researchers with an excellent scientific track record of 10 years and more, ERC Advanced Grants offer up to 2.5 Mio Euros of funding for high risk, high gain research projects of 5 years.

In 2019, Prof. Marlon Dumas from University of Tartu, Estonia, received an ERC Advanced Grant for his project "The Process Improvement Explorer: Automated Discovery and Assessment of Business Process Improvement Opportunities (PIX)".

We are happy that Marlon agreed to share his ERC Advanced Grant success story in the following interview.

## What are the goals and challenges of the PIX project?

The PIX project is an opportunistic project. It starts from the opportunity to improve business processes beyond how it is currently done, i.e., manually by process analysts based on interviews and expert knowledge in order to derive changes to the business process that address the causes of the issues. However, this way, the issues can only be detected if they are sufficiently large, i.e., detectable by the analysis. Hence, nowadays, mature BPM companies detect the most obvious issues, optimized for the happy paths of the business processes. Typically, numerous exceptions happen that are quite rare and hence do not attract the attention of the analysts, but in sum can have a large impact. In addition, an increasing number of more fine-grained data sources of business process execution data become available. This holds true for data that is collected at the process level, i.e., by an Enterprise Information System, and at the task level.

The PIX project, hence, aims at sifting through vast volumes of process execution data and to automatically finding ways of process improvement based on identifying the root causes of issues and providing algorithmic versions of process improvement heuristics.

To achieve this, PIX follows four research vectors: i) robotic task automation, ii) control-flow optimization, iii) cost-sensitive decision rule refinement, and iv) optimization of resource allocation.

PIX will be designed as an open-source system where users can interactively explore the state space of possible process optimizations based on different performance heuristics.



## What are in your experience the main challenges in defining a suitable topic for an ERC proposal?

A suitable topic marries the ERC keywords of "high risk" and "high gain". The first thing to keep in mind is not to propose a project that addresses a surrogate problem, i.e., a problem that contributed to solving some other "important" problem. Surrogate problems have indirect impact. In ERC projects one should try to address the im-

portant problem, and not a surrogate of it. Improving processes is an important problem. The topic must have a direct impact. The high-risk aspect means that the problem is challenging from a scientific perspective and results are not guaranteed. In PIX, four research vectors were defined. Each of these vectors is very risky, but also is promising to achieve a fundamental breakthrough with an immediate impact. Maybe we will not come up with satisfactory solutions to all four problems, but a breakthrough along one of the four research vectors would already be a significant advance, which could inspire researchers and developers to go further.

## What are the main challenges in positioning the topic in the ERC thematic framework?

There might be a focus on theoretical projects, but if you look at past granted projects, there are also lots of ERC grants in the fields of database technology, software engineering and (applied) machine learning. There is no reason why there shouldn't be more ERC grantees in the fields of information systems and BPM.

The PIX project was submitted to PE6: Computer Science and Informatics. A BPM proposal focusing on Track III topics of the BPM conference could be also submitted to SH1: Individuals, Markets and Organisations. It is important to highlight the cross-disciplinary nature of the BPM field. Our cross-disciplinarity is one of our key strengths.

## How did you experience the process of writing the proposal? How did you find time amongst all other duties? How did you experience the pressure/mental load?

According to my experience, preparing an ERC Advanced Grant proposal takes at least 300 hours of work. And often being successful with an ERC grant

takes more than one shot. The development of the ideas is crucial and takes its time, i.e., developing the hierarchy of ideas starting from the overall goal. The proposal must be dense in ideas, along each of the research vectors. I would recommend to start 6 – 12 months prior to the deadline by accumulating ideas in a notebook. For PIX that was submitted in 2018, the seed idea occurred in 2015 when preparing a keynote that I delivered. The main message of the keynote talk was “improve the process, not the process model”. The fact that this problem was still prevalent in 2018

when I wrote the ERC grant confirms that this problem is relevant in the long term. Another advice from my side is: better go with two really good ideas than with two really good ideas and one bad one (“let the good ideas shine”).

Overall, I think we as a community have to get into applying for ERC grants, and not be afraid of it. Working on such a proposal pays off. It helps you defining a research agenda for the next 3 – 4 years. Also the proposal – if not successful at the ERC level – can make a strong

proposal at the national level such as, for example, Estonia has “consolation” grants in case an ERC grant is not accepted but it goes above the threshold.

And even if you don’t get funding, having a clear long-term five-years vision is very valuable on its own.

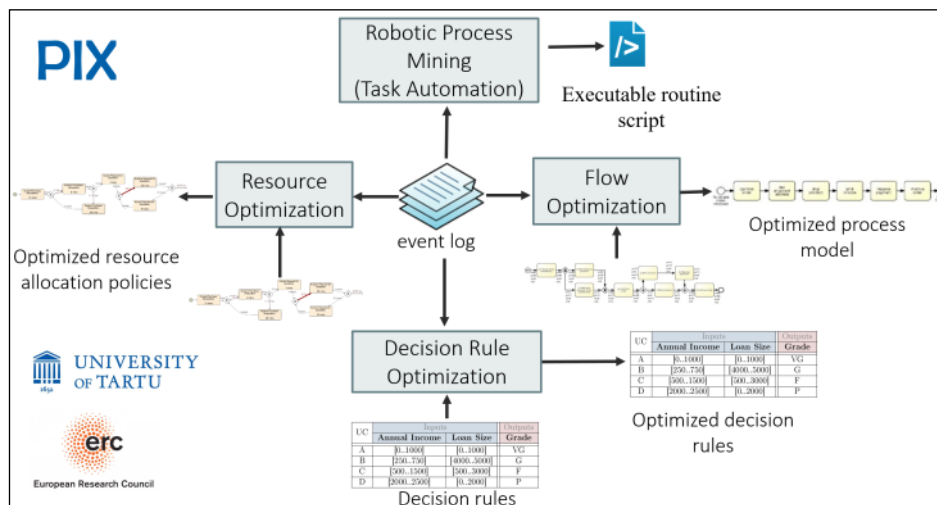
### Eight months into PIX – what are your experiences in starting and running a project of this scale?

PIX has been successfully started and has already created very promising results. We have developed some preliminary techniques for discovering robotic process automation scripts from noisy User Interaction logs. We have also developed a data-driven simulator, which builds accuracy-optimized simulation models from nothing else than an event log as input. These are building blocks for the rest of the project. Until now, the main challenge we have encountered is finding people and time.

Nothing surprising about this, people, and time are the most valuable resources one can hope to have.

**Thank you, Marlon, for sharing these highly interesting and inspiring insights.**

Stefanie Rinderle-Ma (Interview Editor)



## BPM 2018 SPECIAL ISSUE AVAILABLE

The Special Issue „BPM 2018 selected papers in foundations and engineering“, edited by Marco Montali, Ingo Weber, Mathias Weske, and Manfred Reichert, is currently in press at Elsevier’s Information Systems and has been available online since November 2019. It contains the revised and extended versions of four papers out of the 18 accepted papers in the BPM 2018 foundations and engineering tracks.

The article CoPModL: Construction Process Modeling Language and Satisfiability Checking by Marengo et al. introduces CopModL—a multi-perspective language dedicated to the modeling of construction processes. A formal language semantics based on linear temporal

logic over finite traces is presented and an effective algorithm for checking the consistency of CopModL models is introduced. In Formalising and Animating Multiple Instances in BPMN Collaborations, Corradini et al. provide a formal semantics of cross-organizational business processes expressed in terms of BPMN collaborations. The semantics captures the interplay of control-flow, message exchanges, and data, in a setting where multiple instances of the involved pools are present.

The article BINet: Multi-perspective Business Process Anomaly Classification by Nolle et al. deals with real-time anomaly detection in business process event logs. The approach is based on neural

networks, and simultaneously handles the control flow and data perspectives reflected in the logs. In Aligning Observed and Modelled Behaviour by Maximizing Synchronous Moves and Using Milestones, Bloemen et al. push forward the boundaries of conformance checking. The authors introduce a dedicated data structure for conformance checking, with the twofold objective (1) to tackle the performance issues that alignment-based techniques show when applying them to large event logs and models and (2) to improve the diagnostics for nonconforming traces. [doi.org/10.1016/j.is.2019.101477](https://doi.org/10.1016/j.is.2019.101477)

Manfred Reichert (IS Liaison for the SC)



## GROUP COLUMN: FOCUS ON SEVILLE

For the second time the BPM Newsletter features a group column that has the goal to introduce different BPM groups with their specific research focus and highlights. This group column introduces the Applied Software Engineering Group at the University of Seville that will organize BPM 2020 in Seville, Spain.

The Applied Software Engineering (ISA) Group at the Universidad de Sevilla is led by Antonio Ruiz-Cortés and composed of 21 members. Its research has always aimed at finding ways to automate activities that are usually performed by hand. Currently, it spans six areas of interest, including Business Process Management, Service Governance, Metaheuristics, Experiments Support, Search-based Software Engineering and Software Testing.

The research on BPM aspects is led by Manuel Resinas and Antonio Ruiz-Cortés, and it occupies 9 group members including 1 Professor, 2 Associate Professors, 5 Assistant Professors and 1

Post-doc Researcher. Their research focuses on the development and application of software tools to improve the performance and human resource management of business processes with a particular emphasis on unstructured knowledge-intensive processes.

In the field of performance management, the group has a strong experience in the monitoring of business processes based on process performance indicators (PPIs). The current interests involve improving the modelling, monitoring and prediction of PPIs. Concerning monitoring, new techniques and methodologies for the definition and monitoring of decisions and unstructured processes are being devised. Finally, in the area of predictive monitoring of PPIs, the research targets problems that appear when a predictive model is deployed in a production system, such as the reliability of the models or the evolution of the predictive model.

The research on human resources covers several different angles. One

stream of research focuses on the application of methodologies to improve personal productivity. Another research stream is focused on the configuration and use of workstream collaboration tools and other related technologies to improve the collaboration of people in a context of digital transformation. Finally, the third research stream tackles the organisational perspective of business processes pursuing the optimisation of the management of human resources along with process modelling, execution and analysis.

These research lines are supported by research projects, which currently involve "HAMLET: Technologies to improve the reliability, customisation and operating costs of applications based on software-based services and knowledge-based services", and "CONFLEX: Integration of context-aware resource management into flexible process-oriented organisations".

Barbara Weber (Group Column Editor)





## PUBLISHED BY THE STEERING COMMITTEE OF THE BPM CONFERENCE SERIES

Wil van der Aalst, Boualem Benattallah, Jörg Desel, Marlon Dumas, Jan Mendling, Manfred Reichert, Stefanie Rinderle-Ma, Michael Rosemann, Shazia Sadiq, Barbara Weber and Mathias Weske (chair).

<http://bpm-conference.org>



*This newsletter is an activity of the BPM conference series. The goal is to further strengthen the BPM community. This newsletter will appear twice per year. Input for the next newsletter is welcome (e.g. activities related to the BPM conference, interviews, contests, new datasets, tools, etc.); please contact [mathias.weske@hpi.de](mailto:mathias.weske@hpi.de)*

## ACTIVITIES OF THE COMMUNITY

The Steering Committee of the BPM Conference series announces the **Best BPM Dissertation Award 2020**. You are eligible, if you have officially completed your PhD on a BPM related topic after January 1st, 2019. You can only be nominated by your primary supervisor. This is a prestigious award and will definitely be a cornerstone in your academic career. And, by the way, the winner will be awarded a prize of €1000 and a free registration to the BPM 2020 conference. Details on the submission procedure can be found at <https://congreso.us.es/bpm2020/calls/dissertation>.

**Matthias Weidlich** was appointed Editor-in-Chief of Elsevier's Information Systems Journal. Together with Dennis Shasha and Gottfried Vossen, he heads



that excellent journal, which has been an outlet of an impressive number of well-cited BPM papers over the years.

The **Second International Conference on Process Mining (ICPM 2020)** will take place in October in the city of Padua, a picturesque city in the northeast of Italy, 40km west of Venice. ICPM 2020 will be chaired by Dr. de Leoni and Prof. Sperduti (University of Padua). The first edition in Aachen in 2019 was a huge success with over 420 participants of whom 23% were representatives of tool vendors and 43% were end-users and consultants. All signs indicate that ICPM 2020 will be only the prelude to a very successful new conference series. ICPM provides a platform where process miners from academia and industry meet. Moreover, ICPM nicely complements BPM and the timing allows people to attend both events.

ICPM 2020 will again be supported by the leading vendors in process mining: Nine companies already expressed their interest in sponsoring, and more will likely follow.

ICPM 2020 will feature a diversified program, whose quality is testified by the technical IEEE co-sponsorship. ICPM 2020 will include exciting scientific talks, tool demonstrations, contests, lots of workshops and co-located events, and various awards. The program is greatly enhanced by an Industry Day, where thought leaders from industry will report on the application of process mining and join a panel on emerging topics. <https://icpmconference.org/2020/>.

Wil van der Aalst, Massimiliano de Leoni

