**Statement of individual author contributions and of legal second publication rights to manuscripts included in the dissertation**

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| **Manuscript 1: Research Article (published)**  Martin Kuric (MK), Susanne Beck (SB), Doris Schneider (DS), Wyonna Darleen Rindt (WDR), Marietheres Evers (MS), Jutta Meißner-Weigl, Sabine Zeck (SE), Melanie Krug, Marietta Herrmann, Tanja Nicole Hartmann, Ellen Leich, Maximilian Rudert, Denitsa Docheva, Anja Seckinger, Dirk Hose, Franziska Jundt (FJ), Regina Ebert (RE) (2024): Describing Myeloma Dissemination *in vitro* with hMSC-Interacting Subpopulations and their Aggregation/Detachment Dynamics, **Cancer Research Communications** | | | | | |
| **Participated in** | **Author Initials,** Responsibility decreasing from left to right | | | | |
| Study Design | MK | RE | FJ | Dirk Hose | Anja Seckinger |
| Methods Development | MK | DS | WDR |  |  |
| Data Collection | MK | DS | SZ | Melanie Krug | Jutta Meißner-Weigl |
| Data Analysis and Interpretation | MK | SB | RE | FJ | Dirk Hose |
| Manuscript Writing  Writing of Introduction  Writing of Materials & Methods  Writing of Discussion  Writing of First Draft | MK | RE | FJ |  | All |

**Explanations**: The content of this publication exceeds the usual scope (~29 pages Supplemental). It includes not only research findings but also survival data and protocols of new, established methods and their validations. The contribution of Martin Kuric was pivotal and predominant in all aspects of this work. DS assisted in the experimental procedures. Susanne Beck analyzed the raw data from RNAseq and survival data, which were interpreted, depicted, and summarized by Martin Kuric. “All” includes all authors unmentioned in the same row in no particular order.

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| **Manuscript 2: Data Analysis Software (published)**  Martin Kuric (MK), Regina Ebert (RE) (2024): plotastic: Bridging Plotting and Statistics in Python, **Journal of Open Source Software** 9(95), 6304, https://doi.org/10.21105/joss.06304 | | | | | |
| **Participated in** | **Author Initials,** Responsibility decreasing from left to right | | | | |
| Study Design | MK |  |  |  |  |
| Methods Development | MK |  |  |  |  |
| Data Analysis and Interpretation | MK |  |  |  |  |
| Manuscript Writing  Writing of Statement of Need  Writing of Example  Writing of Overview | MK | RE |  |  |  |

**Explanations:** This chapter is the manuscript of a software paper. This paper, its structure (Statement of Need, Example and Overview), and its use as a chapter in this manuscript/chapter-based thesis has been approved by the GSLS Common Graduation Commission. The software and its initial idea were entirely designed, developed, tested, documented, and released by MK. The software comprises more than 8000 total lines of code (including ~2000 testable lines) and is comparable in size to a typical web application. Study design includes the initial idea and designing the architecture of the software modules. Methods development includes the independent acquisition of python development skills, developing prototypes, and the implementation of features into the design architecture. Data collection includes collecting test datasets for the software testing suite. Data analysis and interpretation includes developing the software testing suite (using pytest and continuous integration tools) and writing the online documentation (manuals and examples). Manuscript writing included the release of this software, which involved version control using GitHub, packaging and deployment on PyPi. RE gave feedback on the manuscript draft and has raised the funds for financing.

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| **Manuscript 3: Research Letter (published****)**  Daniela Simone Maichl (DSM), Julius Arthur Kirner (JAK), Susanne Beck (SB), Wen-Hui Cheng, Melanie Krug (MeK), Martin Kuric (MK), Carsten Patrick Ade, Thorsten Bischler, Franz Jakob, Dirk Hose, Anja Seckinger, Regina Ebert (RE) & Franziska Jundt (FJ) (2023): Identification of NOTCH-driven matrisome-associated genes as prognostic indicators of multiple myeloma patient survival, **Blood Cancer Journal**, 13:134, https://doi.org/10.1038/s41408-023-00907-6 | | | | | |
| **Participated in** | **Author Initials,** Responsibility decreasing from left to right | | | | |
| Study Design  Methods Development | DSM | JAK | FJ |  |  |
| Data Collection | DSM | JAK | MeK | FJ |  |
| Data Analysis and Interpretation | DSM | SB | FJ | MK |  |
| Manuscript Writing  Writing of Introduction  Writing of Materials & Methods  Writing of Discussion  Writing of First Draft | DSM | FJ | RE | MK |  |

**Explanations:** This co-authorship is not a chapter in this dissertation. Martin Kuric produced figures of processed but complex-to-visualize data and gave feedback on the manuscript before submission.

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| **Manuscript 4: Research Paper (Accepted****, in press)**  Wyonna Darleen Rindt (WDR), Melanie Krug (MeK), Shuntaro Yamada, Franziska Sennefelder, Louisa Belz, Wen-Hui Cheng, Azeem Muhammad,Martin Kuric (MK), Marietheres Evers, Ellen Leich, Tanja Nicole Hartmann, Ana Rita Pereira, Marietta Hermann, Jan Hansmann, Mohammed Ahmed Yassin, Kamal Mustafa, Regina Ebert (RE), and Franziska Jundt (FJ ) (2024): A 3D bioreactor model to study osteocyte differentiation and mechanobiology under perfusion and compressive mechanical loading, **Acta Biomaterialia**, S1742-7061, https://doi.org/10.1016/j.actbio.2024.06.041 | | | | | |
| **Participated in** | **Author Initials,** Responsibility decreasing from left to right | | | | |
| Study Design  Methods Development | FJ | WDR | RE | MK |  |
| Data Collection | WDR | MeK | FJ | MK |  |
| Data Analysis and Interpretation | WDR | FJ | RE | MK |  |
| Manuscript Writing  Writing of Introduction  Writing of Materials & Methods  Writing of Discussion  Writing of First Draft | WDR | FJ | RE | MK |  |

**Explanations:** This co-authorship is not a chapter in this dissertation. Martin Kuric contributed by counseling during weekly meetings in tight collaboration with Franziska Jundt’s group, assisting WDR during laboratory experiments, image analysis and giving feedback on submitted manuscript.

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| **Manuscript 5: Research Letter (published)**  Marietheres Evers (ME), Martin Schreder (MS), Thorsten Stühmer (TStü), Franziska Jundt (FJ), Regina Ebert (RE), Tanja Nicole Hartmann (TNH), Michael Altenbuchinger (MA), Martina Rudelius (MR), Martin Kuric (MK), Wyonna Darleen Rindt (WDR), Torsten Steinbrunn (TSte), Christian Langer, Sofia Catalina Heredia-Guerrero, Hermann Einsele (HE), Ralf Christian Bargou (RCB), Andreas Rosenwald (AR), Ellen Leich (EL) (2023): Prognostic value of extracellular matrix gene mutations and expression in multiple myeloma, **Blood Cancer J.**,13(1):43, https://doi.org/10.1038/s41408-023-00817-7 | | | | | | | | | | |
| **Participated in** | **Author Initials,** Responsibility decreasing from left to right | | | | | | | | | |
| Study Design  Methods Development | EL | ME | FJ | RCB | AR |  |  |  |  |  | |
| Data Collection | EL | MS | MR | TSte | HE |  |  |  |  |  | |
| Data Analysis and Interpretation | ME | MA | EL | TStü | FJ | RE | TNH | MK | WDR | TSte | |
| Manuscript Writing  Writing of Introduction  Writing of Materials & Methods  Writing of Discussion  Writing of First Draft | ME | EL | MS | All |  |  |  |  |  |  | |

**Explanations:** This co-authorship is not a chapter in this dissertation. Martin Kuric contributed by counseling during regular meetings with Ellen Leich’s group and giving feedback on submitted manuscript. “All” includes all authors unmentioned in the same row in no particular order.

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The doctoral researcher and the primary supervisor confirm the correctness of the above mentioned assessment.

Martin Kuric 01.08.2024 Würzburg

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Doctoral Researcher’s Name Date Place Signature

Regina Ebert 01.08.2024 Würzburg

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Primary Supervisor’s Name Date Place Signature