# STEFFEN BORGWARDT Curriculum Vitae

Professor Department of Mathematical and Statistical Sciences College of Liberal Arts and Sciences University of Colorado Denver <u>steffen.borgwardt@ucdenver.edu</u>

### **EDUCATION**

**Habilitation**, May 2015, 'Data Analysis through Polyhedral Theory', Technische Universität München

**Dr. rer. nat.** in **Mathematics,** Dec. 2010, 'A Combinatorial Optimization Approach to Constrained Clustering', advisor: P. Gritzmann, Technische Universität München, summa cum laude

**Diploma (M.Sc.)** in **Computer Science** and **Diploma (M.Sc.)** in **Mathematics**, Mar. 2007, Technische Universität München

### EMPLOYMENT AND PROFESSIONAL EXPERIENCE

**Professor**, 8/24-current, University of Colorado Denver, Department of Mathematical and Statistical Sciences

**Director of Graduate Programs**, 7/20-6/23, 1/25-current, University of Colorado Denver, Department of Mathematical and Statistical Sciences

**Associate Professor**, 9/19-7/24, University of Colorado Denver, Department of Mathematical and Statistical Sciences

**Assistant Professor**, 9/16-8/19, University of Colorado Denver, Department of Mathematical and Statistical Sciences

Privatdozent, 9/15-8/16, Technische Universität München, Department of Mathematics

**Visiting Assistant Professor,** 9/14-8/15, University of California Davis, Department of Mathematics

Acting Associate Professor, 9/13-4/14, Technische Universität Braunschweig, Department of Mathematics

**Head of Research and Development Project 'ArborChange'**, 4/12-8/13, Project of the Bavarian State Ministry for Nutrition, Agriculture and Forests

**Postdoctoral Research Associate**, 1/11-3/12 and 5/14-8/14, Technische Universität München, Department of Mathematics

### JOURNAL PUBLICATIONS

S. Borgwardt, A. Morrison (2025) On Combinatorial Algorithms and Circuit Augmentation for Pseudoflows. **Journal of Combinatorial Optimization** 49, 73, doi/10.1007/s10878-025-01313-3 (MIP conference poster award for co-author)

S. Borgwardt, W. Grewe, S. Kafer, J. Lee, L. Sanita (2025) On the Hardness of Short and Sign-Compatible Walks. **Discrete Applied Mathematics** 367, pp. 129-149

S. Borgwardt, W. Grewe, J. Lee (2025) On the Diameter of a 2-Sum of Polyhedra. **Optimization** Letters, doi/10.1007/s11590-025-02198-1

M.E. Eton, S. Borgwardt, D. Mays (2024) Inverse Method to Determine the Hydraulic Conductivity Parameter from a Velocity Field using Graph Theory. **Interpore Journal** 1:3, IPJ271124–5

S. Borgwardt, S. Patterson (2024) An Integer Program for Pricing Support Points of Exact Barycenters. **INFORMS Journal on Optimization** 6:2, pp. 137-153

S. Borgwardt, W. Grewe, J. Lee (2024) On the Combinatorial Diameters of Parallel and Series Connections. **SIAM Journal on Discrete Mathematics** 38:1, doi/10.1137/22M1490508

S. Borgwardt, M. Brugger (2024) Circuits in Extended Formulations. **Discrete Optimization** 52:100825

S. Borgwardt, F. Happach, S. Zirkelbach (2023) An Algorithm for the Separation-Preserving Transition of Clusterings. **INFORMS Journal on Optimization** 5:1, pp. 1-26

S. Borgwardt, C. Viss (2022) A Polyhedral Model for Enumeration and Optimization over the Set of Circuits. **Discrete Applied Mathematics** 308, pp. 68-83 (university-wide best dissertation award for co-author)

S. Borgwardt, C. Viss (2022) Circuit Walks in Integral Polyhedra. **Discrete Optimization** 44(1):100566

S. Borgwardt (2022) An LP-based, Strongly Polynomial 2-Approximation Algorithm for Sparse Wasserstein Barycenters. **Operational Research** 22, p.1511-1551

S. Borgwardt, S. Patterson (2022) A Column Generation Approach to the Discrete Barycenter Problem. **Discrete Optimization** 43:100674

S. Borgwardt, C. Viss (2021) Constructing Clustering Transformations. **SIAM Journal on Discrete Mathematics** 35:1, pp. 152-178

S. Borgwardt, C. Brand, A. Feldmann, M. Koutecky (2021) A Note on the Approximability of Deepest-Descent Circuit Steps. **Operations Research Letters** 49:1, pp. 310-315

S. Borgwardt, S. Patterson (2021) On the Computational Complexity of Finding a Sparse Wasserstein Barycenter. Journal of Combinatorial Optimization 41:3, pp. 736-761

S. Borgwardt, C. Viss (2020) An implementation of steepest-descent augmentation for linear programs. **Operations Research Letters** 48:3, pp. 323-328

S. Borgwardt, S. Patterson (2020) Improved Linear Programs for Discrete Barycenters. **INFORMS** Journal on Optimization 2:1, pp. 14-33

S. Borgwardt, F. Happach (2019) Good Clusterings Have Large Volume. **Operations Research** 67:1, pp. 215-231 (INFORMS student paper award for co-author)

S. Borgwardt, R. Frongillo (2019) Power Diagram Detection with Applications to Information Elicitation. **Optimization Theory and Applications** 181:1, pp. 184-196

S. Borgwardt, T. Stephen, and T. Yusun (2018) On the Circuit Diameter Conjecture. **Discrete & Computational Geometry** 60:3, pp. 558-587

S. Borgwardt, J. De Loera, E. Finhold, and J. Miller (2018) The Hierarchy of Circuit Diameters and Transportation Polytopes. **Discrete Applied Mathematics** 240, pp. 8-24

S. Borgwardt, J. De Loera, and E. Finhold (2018) The Diameters of Network Flow Polytopes satisfy the Hirsch Conjecture. **Mathematical Programming** 171:1-2, pp. 283-309

S. Borgwardt, A. Brieden, and P. Gritzmann (2017) An LP-based k-means algorithm for balancing weighted point sets. **European Journal of Operational Research** 263, pp. 349-355

E. Anderes, S. Borgwardt, and J. Miller (2016) Discrete Wasserstein Barycenters: Optimal Transport for Discrete Data. **Mathematical Methods of Operations Research** 84:2, pp. 389-409

S. Borgwardt, S. Onn (2016) Efficient solutions for weight-balanced partitioning problems. **Discrete Optimization** 21:C, pp. 71-84

S. Borgwardt, E. Finhold, and R. Hemmecke (2016) Quadratic diameter bounds for dual network flow polyhedra. **Mathematical Programming** 159:1, pp. 237-251

S. Borgwardt, J. De Loera, E. Finhold (2016) Edges vs Circuits: a Hierarchy of Diameters in Polyhedra. Advances in Geometry 16:4, pp. 511-530

S. Borgwardt, A. Brieden, and P. Gritzmann (2015) Geometrisches Clustering: Mathematik für die Flurverbesserung (Geometric clustering: Mathematics for land improvement). **Mitteilungen der DMV** 23/2015, pp. 82-90

S. Borgwardt (2015) On Soft Power Diagrams. Mathematical Modelling and Algorithms in Operations Research 14:2, pp. 173-196

S. Borgwardt, E. Finhold, and R. Hemmecke (2015) On the circuit diameter of dual transportation polyhedra. **SIAM Journal on Discrete Mathematics** 29:1, pp. 113-121

S. Borgwardt, S. Schaffner, M. Suda (2014) Geometrische Kennzahlen für die forstfachliche Bewertung der Zersplitterung von Privatwaldarealen (Geometric measures for the assessment of fragmentation of private forest areas). **Forstarchiv** 06/14, pp. 188-196

S. Borgwardt, A. Brieden, and P. Gritzmann (2014) Geometric clustering for the consolidation of farmland and woodland. **Mathematical Intelligencer** 36:2, pp. 37-44 (including front cover of journal)

S. Borgwardt, F. Schmiedl (2014) Threshold-based preprocessing for approximating the weighted dense k-subgraph problem. **European Journal of Operational Research** 234, pp. 631-640

S. Borgwardt (2013) On the Diameter of Partition Polytopes and Vertex-Disjoint Cycle Cover. **Mathematical Programming**, Series A 141:1, pp. 1-20

S. Borgwardt, A. Brieden, and P. Gritzmann (2011) Constrained Minimum-k-Star Clustering and its application to the consolidation of farmland. **Operational Research** 11:1, pp. 1-17

### GRANTS

### CURRENT

**DoD-AFOSR Regular Grant 2024-27**, received 8/24, 'Advances in Circuit Augmentation', awarded by AFOSR, Air Force Office of Scientific Research, volume \$459,500, subcontracted co-PI Dr. Jon Lee, University of Michigan

**NSF Standard Grant 2020-25,** received 6/20, 'AF: Circuit Walks in Optimization', awarded by the NSF Division of Computing and Communication Foundations, Algorithmic Foundations program, volume \$233,560

**Graduate Research Workshops in Combinatorics 2020-26**, previous co-PI (rotating) / current organizing committee, continuing grant supported by the NSF Division of Mathematical Sciences, Combinatorics program, series of research workshops

### PREVIOUS

**DoD-AFOSR Regular Grant 2021-24**, received 4/21, 'The Hirsch-Conjecture for Totally-Unimodular Polyhedra', awarded by AFOSR, Air Force Office of Scientific Research, volume \$374,716, subcontracted co-PI Dr. Jon Lee, University of Michigan

**Simons Foundation Collaboration Grant for Mathematicians 2017-22**, received 6/17, 'Polyhedral Theory in Data Analytics', awarded by the Simons Foundation, volume \$42,000

**ORS Large Grant**, received 1/17, 'Constructing the Difference of Clusterings', awarded by the Office of Research Services, University of Colorado Denver, volume \$11,200

#### Research and Development Project 'ArborChange', 4/12-8/13,

Project of the Bavarian State Ministry for Nutrition, Agriculture and Forests, volume \$110,000 + indirect costs (estimated \$42,000), and primary costs (direct and indirect) for 1.75 full-time employees of the Bavarian state for one year (estimated \$180,000)

### **PUBLICATIONS IN REVIEW**

S. Borgwardt, N. Crawford, D. Horton, A. Morrison, E. Speakman (2024) *Evacuation Planning on Time-Expanded Networks with Integrated Wildfire Information.* available on arxiv:2410.14500

M. Bayer, S. Borgwardt, et al. (11 authors) (2024) *Combinatorics of Generalized Parking-Function Polytopes.* available on arxiv:2403.07387

S. Borgwardt, C. Buchanan, E. Culver, B. Frederickson, P. Rombach, Y. Yoo (2023) *Path Odd-Covers of Graphs*. available on arxiv:2306.06487

A. Black, S. Borgwardt, M. Brugger (2023) *On the Circuit Diameter Conjecture for Counterexamples to the Hirsch Conjecture.* available on arxiv:2302.03977

### **PUBLICATIONS IN PREPARATION**

S. Borgwardt, N. Crawford, S. Kafer, J. Lee, A. Morrison (exp. 7/2025) Circuit Imbalance and 0/1-Diameters for some Graph Theoretic Problems

S. Borgwardt, B. Frederickson, A. Nix, Y. Yoo (exp. 7/2025) *Improved Decomposition Bounds for Partition Polytopes and Odd Covers* 

S. Borgwardt, Z. Sorenson (exp. 9/2025) Cycle Canceling Heuristics for the Traveling Salesman Problem

### **OTHER PUBLICATIONS**

M. Bayer, S. Borgwardt, et al. (11 authors) (2023) *Combinatorics of Generalized Parking-Function Polytopes.* Extended abstract (followed up by journal paper, see above). Graduate Research Workshop in Combinatorics 23 paper

A. Black, S. Borgwardt, and M. Brugger (2022) *Short Circuit Walks for Hirsch Counterexamples.* Technical Report, available on arxiv:2302.03977v1

A. Malkis, S. Borgwardt (2019) *Binary Multithreaded Programs have Low Reachability-Complexity* and Small Diameters. Technical report

S. Borgwardt (2018) *Strongly Polynomial 2-Approximations for Discrete Wasserstein Barycenters.* Technical Report available on arxiv: 1704.05491v3

A. Malkis, S. Borgwardt (2017) *Reachability in Binary Multithreaded Programs Is Polynomial*. **ICDCS 17**, doi: 10.1109/ICDCS.2017.290

S. Borgwardt, J. De Loera, and E. Finhold (2016) *The Diameters of Transportation Polytopes satisfy the Hirsch Conjecture*. **2016 SIAM Workshop on Network Science**. Extended abstract. Full technical report available on arxiv: 1603.00325v1

S. Borgwardt (2015) Data Analysis through Polyhedral Theory, Habilitation thesis

S. Borgwardt, A. Malkis, and Y. Nagashima (2014) *On the Diameter of Multithreaded Programs: The Basic Case*. Technical report

S. Borgwardt, A. Brieden, and P. Gritzmann (2013) *Mathematics in Agriculture and Forestry: Geometric Clustering for Land Consolidation*. **IFORS news**, Dec. 2013

S. Borgwardt (2013) *Das Programm ArborTec – ArborChange mit ArborEval und ArborOpt*. Public report for the software engineered in project ArborChange of the Bavarian State Ministry for Nutrition, Agriculture, and Forests.

K. Borgwardt, S. Borgwardt, A. Feragen, N. Shervashidze (2011) *Balanced kernel k-means for comparing large graphs with landmarks*. Technical report

S. Borgwardt (2010) A Combinatorial Optimization Approach to Constrained Clustering, Ph.D. thesis

#### **CONFERENCE AND SPECIAL SESSION ORGANIZATION**

#### **Conference Organization**

Organizing Committee, co-PI Graduate Research Workshop in Combinatorics, June 2025 Iowa State University

#### **Conference Organization**

Organizing Committee, co-PI Graduate Research Workshop in Combinatorics, May 2024 University of Wisconsin Milwaukee

#### **Conference Organization**

Organizing Committee, co-PI Graduate Research Workshop in Combinatorics, July 2023 University of Wyoming

**Conference Organization** 

Workshop on Circuit Diameters and Augmentation, May 2023 Organized as PI for NSF grant hosted at the University of Colorado Denver

#### **Conference Organization**

Organizing Committee, co-PI Graduate Research Workshop in Combinatorics, August 2022 hosted at the University of Colorado Denver

#### **AMS Special Session Organization**

Joint Mathematics Meeting, January 2020 Colorado Convention Center, Denver

#### **Conference Organization**

Organizing Committee INFORMS Optimization Society Meeting, March 2018 hosted at the University of Colorado Denver

#### **Conference Organization**

Organizing Committee Colloquium in Honor of the 60<sup>th</sup> Birthday of Peter Gritzmann, Dec. 2014 hosted at the Technische Universität München

#### **Conference Organization**

Organizing Committee ECCO-CO 2014 – European Chapter on Combinatorial Optimization, May 2014 hosted at the Technische Universität München

### **RESEARCH VISITS, INVITED COLLOQUIUM/SEMINAR TALKS**

### 2024

University of Technology Nuremberg Technische Universität München Massachusetts Institute of Technology

### 2022

University of Colorado Boulder Technische Universität München

# 2021

University of Passau

# 2019

Ulm University Technische Universität München University of Colorado Denver, College of Engineering, Design and Computing

# 2018

Colorado State University

# 2017

Technische Universität München University of Wyoming INFORMS Rocky Mountain Chapter Meeting University of Colorado Boulder (twice)

### 2016

Simon Fraser University Surrey Simon Fraser University Burnaby University of Colorado Denver Georgia Southern University Northern Illinois University Technische Universität Chemnitz

### 2015

Maastricht University Cardiff University University of Edinburgh University of California Los Angeles University of North Carolina Chapel Hill

### 2014

Technion – Israel Institute of Technology, Haifa

### 2013

University of California Davis Technische Universität Dortmund Universität Hamburg Technische Universität Hamburg-Harburg 2012 Goethe-Universität Frankfurt Max-Planck Institute Tübingen

### CONFERENCE AND WORKSHOP PRESENTATIONS, SESSION CHAIR

#### 2024

Informs Annual Meeting 2024, Seattle International Symposium on Mathematical Programming, Montreal Sixth Conference on Discrete Optimization and Machine Learning, Tokyo

### 2023

'Combinatorics and Optimization', ICERM, Providence

2022

CAIMS Annual Meeting 2022, Kelowna

**2021** Hausdorff Institute, Bonn

**2020** Joint Mathematics Meetings 2020, Denver

**2019** Joint Mathematics Meetings 2019, Baltimore

### 2018

ORS Immigration Research Meeting, Denver 'Optimization and Discrete Geometry: Theory and Practice', Tel Aviv INFORMS Optimization Society Meeting 2018, Denver

**2017** SIAM Optimization 2017, Vancouver

**2015** DMV-Jahrestagung 2015, Hamburg ISMP 2015, Pittsburgh 'Paths, Pivots, and Practice: The Power of Optimization', Montreal

**2014** IFORS 2014, Barcelona ECCO-CO 2014, Munich

**2013** EURO 2013, Rome

2012

ISMP 2012, Berlin EURO 2012, Vilnius ECCO 2012, Antalya

### 2010-2020, 2022-23

Participation in 17 interdisciplinary workshops and 8 conferences (without presentations)

### **PROFESSIONAL ORGANIZATIONS (MEMBERSHIP)**

AMS – American Mathematical Society SIAM – Society of Industrial and Applied Mathematics INFORMS – The Institute for Operations Research and the Management Sciences DHV – Deutscher Hochschulverband

### COURSES TAUGHT

### **CU DENVER**

(College and campus-level awards 2021 for Excellence in Teaching)

Applied Discrete Mathematics Applied Linear Algebra (6 times) Independent Study (5 times) Integer Programming (4 times) Introduction to Operations Research Linear Programming (4 times) Network Flows (3 times) Readings: Optimization (15 times) Topics in Optimization: Circuits in Optimization Topics in Optimization: Combinatorial Optimization

### TU MUNICH, UC DAVIS, TU BRAUNSCHWEIG, ISM MUNICH

Algebraic and Geometric Techniques for Optimization (proble	m session)	(teaching award)
Applied Discrete Mathematics (problem session)		
Combinatorial Optimization (problem session)		
Computational Complexity in Optimization (problem session)		(teaching award)
Discrete Mathematics in Data Analytics (seminar)		
Discrete Optimization		
Game Theory 1 (seminar)		
Game Theory 2 (seminar)		
Introduction to Discrete Mathematics		
Linear Algebra		
Linear Algebra for Computer Science	(best teaching awar	d TeachInf, 2016)
Linear Optimization		
Mathematics 1		
Mathematics 1 for Electrical Engineering (problem session)		
Mathematics 2 for Electrical Engineering (problem session)		
Mathematics and Computers		
Mathematical Methods for the Business Sciences 2 (problem session)		
Optimization 1 (problem session)		
Optimization 2 (problem session)		
Optimization 3 (problem session)		
Programming Course: Optimization 1		
Programming Course: Optimization 2		
Selected Topics from Combinatorial Optimization (seminar)		

### MENTORING

### PHD

**Nicholas Crawford**, CU Denver, 'Extremal Combinatorics and Optimization: The Method and Application of Flag Algebras and Circuits of the Coloring Polytope', PhD completed 4/25 **Angela Morrison**, CU Denver, 'On Circuit-Based Optimization Methods', PhD completed 4/25 **Zachary Sorenson**, CU Denver, 'A Cycle-Canceling Heuristics for the Traveling Salesman Problem', completed 4/25

Weston Grewe, CU Denver, 'On Short Combinatorial Walks', PhD Completed 4/24 Matthias Brugger, TU Munich, co-mentor, PhD completed 2/24, two joint papers (without primary advisor)

**Felix Happach**, TU Munich, **co-mentor**, PhD completed 10/20, two joint papers (without primary advisor), INFORMS Student Paper Prize 2018 (see awards)

**Charles Viss**, CU Denver, 'Circuits in Optimization', PhD completed 4/20, Best Dissertation Award (see awards)

Stephan Patterson, CU Denver, 'Algorithms for Discrete Barycenters', PhD completed 3/20

# MASTER, BACHELOR, HONORS, READINGS

12 completed master's projects, a student received best master's thesis award from GOR - Gesellschaft für Operations Research (see awards)
10 completed bachelor's and honors projects
19 directed research, independent study, and readings classes since 2016

# SELECTED LEADERSHIP AND SERVICE

Fall 2025 (planned)Graduate Program DirectorGraduate AdvisorVice Chancellor's Advisory CommitteeCampus Academic Integrity CommitteeExecutive CommitteePreliminary Exam Committee, chair, Linear ProgrammingCo-Organization of Operations Research SeminarDoctoral committee for eight students

### Spring 2025

Graduate Program Director Graduate Advisor and Graduate Admissions Director Search Committee, co-chair, Assistant Professorship in Mathematics CLAS Academic Standards Committee Post-Tenure Review Committee, chair Executive Committee Preliminary Exam Committee, chair, Discrete Mathematics Preliminary Exam Committee, Linear Programming Excellence in Teaching Award Committee NSF Panel Faculty Advisor of the CU Denver Math Club Conference organizing committee, GRWC 2025, preparation & mentoring Co-Organization of Operations Research Seminar Doctoral committee for nine students

### Sabbatical in Fall 2024

AY 2023-24 Graduate Advisor and Graduate Admissions Director CLAS Dean's Advisory Committee for IRCF Personnel Decisions Preliminary Exam Committee, chair, Linear Algebra CLAS Academic Standards Committee Excellence in Teaching Award Committee Search Committee for CLAS Graduate Academic Services Coordinator Post-Tenure Review Committee (three cases) RTP Committee Graduate Recruitment Yield Plan, Department Coordinator Conference organizing committee, GRWC 2024, preparation & mentoring, host Conference organizing committee, GRWC 2023, host Co-Organization of Operations Research Seminar Doctoral committee for ten students (two external)

# AY 2022-23

### **Graduate Program Director**

**Degree program reviews**, 7-year reviews for Higher Learning Commission, PhD and MS in Applied Mathematics

**Conference organization:** Workshop on Circuit Diameters and Augmentation, PI and host **CLAS Dean's Advisory Committee for IRCF Personnel Decisions** 

. Executive Committee

Merit Committee, Chair

Excellence in Teaching Award, Faculty Mentoring Award Selection Committees NSF Panel

Search Committee for Director of Graduate Recruitment

Conference organizing committee, GRWC 2023, preparation & mentoring

Conference organizing committee, GRWC 2022, local host

Co-Organization of Operations Research Seminar

Doctoral committee for ten students (two external), and honor's committee for external student Catalog editor for department

### AY 2021-22

Graduate Program Director Graduate Admissions Committee Executive Committee Initial Appointment Committee Excellence in Teaching Award, Faculty Mentoring Award Selection Committees Conference organizing committee, GRWC 2022, preparation & mentoring Co-Organization of Operations Research Seminar Faculty Advisor of the CU Denver Machine Learning Club Doctoral committee for nine students (two external), master's committee for two students Catalog editor for department

# AY 2020-21

### Graduate Program Director

Graduate Admissions Committee

**Executive Committee** 

**RTP Committee** 

### **Merit Committee**

Co-Organization of Operations Research Seminar **Faculty Advisor** of the CU Denver Machine Learning Club Doctoral committee for three students, master's committee for two students Graduate School Fair, Joint Mathematics Meetings 2021, department booth

### AY 2019-20

### **Graduate Admissions Director**

Executive Committee

Faculty Assembly

RTP and PTR Committees

Co-Organization of Operations Research Seminar

Faculty Advisor of the CU Denver Machine Learning Club

Doctoral committee for four students (one thesis subm.), master's committee for three students Data to Policy Symposium, judge (fall 2019), participation with classes and machine learning club Graduate School Fair, Joint Mathematics Meetings 2020, department booth **AMS Special Session organization**, Joint Mathematics Meetings 2020

# AY 2018-19

Search Committee, co-chair, Assistant Professorship in Optimization (chair after Dec. 15) Executive Committee Undergraduate Committee Preliminary Exam Committee, chair, Linear Algebra (summer 2019) Faculty Assembly Co-Organization of Operations Research Seminar Faculty Advisor of the CU Denver Machine Learning Club STEAMposium, outreach to K-12 and STEM students, department booth Doctoral committee for four students (incl. thesis proposal for own student), master's committee for two students Data to Policy Symposium, participation with two classes Session organization, Joint Mathematics Meetings 2019

# AY 2017-18

Conference organizing committee, Informs Optimization Society Meeting 2018
Search Committee, Assistant Professorship in Optimization
Co-Organization of Operations Research Seminar
Faculty Advisor of the CU Denver Machine Learning Club
Doctoral committee for four students (incl. thesis proposal and comprehensive exam for own student), master's committee for two students
CU Denver Sustainability Day, two talks *Mathematics and Sustainable Agriculture* for K-12 students
Session organization, Informs Optimization Society Meeting 2018

# AY 2016-17 AND EARLIER, GENERAL

Minisymposium Organization, SIAM Conference on Optimization 2017 **Preliminary Exam Committee** Linear Algebra Co-Organization of Operations Research Seminar Doctoral committee for two students, honor's committee for two students Foundations of Mathematics exams, TU Munich, 2016 Moderator for the 26<sup>th</sup> undergraduate student conference, UC Davis, 2015 **Conference organizing committee**, Colloquium in Honor of the 60<sup>th</sup> Birthday of Peter Gritzmann **Conference organizing committee**, ECCO-CO 2014 – Euro Chap. on Combinatorial Optimization IFORS 2014, Barcelona, organizer of stream 'Geometric Clustering' EURO 2013, Rome, organizer of stream 'Geometric Clustering'

# GENERAL

**Reviewer** of more than 55 articles and 30 grant proposals for about 25 journals and organizations 2013-2025

### AWARDS/HONORS

### RESEARCH

**CLAS Award for Excellence in Research**, received 4/24, College of Liberal Arts and Sciences, University of Colorado Denver

**Feodor Lynen Research Scholarship** and lifetime **Humboldt Fellowship**, received 2/14, awarded by the Alexander-von-Humboldt Foundation, 'Data Analysis through the Geometry of Transportation Polytopes', volume ca. \$50,000

**European Excellence in Practice Award 2013**, received 7/13, 'Geometric clustering for the consolidation of farm- and woodland', joint with A. Brieden and P. Gritzmann, awarded by EURO, the Association of the European Operational Research Societies within IFORS

### TEACHING

**CU Denver Award for Excellence in Teaching**, received 11/21, campus-wide, highest teaching award of the University of Colorado Denver, given annually to one faculty member

**CLAS Award for Excellence in Teaching**, received 3/21, College of Liberal Arts and Sciences, University of Colorado Denver

**'TeachInf' Best Teaching Award,** received 7/16, best undergraduate lecture 'Linear Algebra for Computer Science', Department of Computer Science, TU Munich

**Two Outstanding Teaching Awards**, received 3/13 and 7/14, Department of Mathematics, TU Munich

### STUDENTS' RESEARCH AWARDS

**Graduate School Best Dissertation Award**, *Circuits in Optimization*, University of Colorado Denver, received 4/20. Charles Viss (phd student)

**Fulbright Scholarship**, US Department of State, started 2/20. Christina Ebben (master's student). First mathematics Fulbright to Brazil. Visit cut short due to covid. Reapplied and received a second time 1/21.

**Second place award, 2018 Student Paper Prize Competition,** INFORMS Optimization Society, for joint paper *Good Clusterings Have Large Volume,* received 11/18. Felix Happach (phd student)

**GOR-Award 2017,** for best master's thesis, national award of German Society of Operations Research (GOR), received 9/17. Felix Happach (master's student)