

Vitae

Personal data Prof. Dr. Kathrin Bringmann
University of Cologne

Date of Birth May 8, 1977

Family three children (2010, 2012, 2014)

Education

1996 Abitur (grade 1,4), Matthias-Grünewald-Gymnasium, Würzburg.

2002 State examination (“Staatsexamen”) in Mathematics and Theology, University Würzburg.

April 2003 Diploma in Mathematics with distinction (‘mit Auszeichnung’), University Würzburg,
Title of diploma thesis: *Exakte und asymptotische Formeln für verschiedene Partitionenanzahlen*
Advisor: Prof. Dr. G. Köhler.

July 2004 Dr. rer. nat. in Mathematik, University Heidelberg,
Title of the PhD thesis: *Applications of Poincaré series on Jacobi groups*
Advisor: Prof. Dr. W. Kohlen.

Professional Positions

2004–2007 Van Vleck Assistant Professor,
University of Wisconsin in Madison.

2006–2008 Assistant Professor (tenure track),
University of Minnesota in Minneapolis.

2008–2014 W2 Professor (tenure),
University of Cologne.

since 2014 W3 Professor (full professor),
University of Cologne.

Research interests

Number theory, in particular elliptic and Siegel modular forms, Jacobi forms, Maass forms, partitions, and Mock theta functions.

Awards and Prizes

2004 Grant of the DFG (deutsche Forschungsgemeinschaft)

2008 Grant of the Max-Planck Instituts (Bonn)

2008 NSF Grant DMS-0757907 (123 000 Dollar)

2008	NSF Grant DMS-0847842 (with O. Richter) for the conference “Mock theta functions and applications in combinatorics, algebraic geometry, and mathematical physics” (45 000 Dollar)
2008–2016	Member of the graduate school “Globale Strukturen”, University of Cologne
2009–2014 (2019)	extended to 2022 Alfried Krupp Prize for Young University Teachers of the Krupp Foundation (1 million Euro)
2009	Sastra Prize
2010–2011	Humboldt grant for Karl Mahlburg
2014–2018	Grant of the DFG “Shintani-Liftungen für schwach holomorphe Modulformen” (115 900 Euro)
2014–2019	Grant of the European Research Councils “Automorphic q -series and their application” (1 240 500 EUR)
2017–present	Member of the special research field CRC/TRR 191 “Symplectic Structures in Geometry, Algebra and Dynamics”, University of Cologne
2018	Proseaward of the American Mathematical Society for the book <i>Harmonic Maass Forms and Mock Modular Forms: Theory and Applications</i> with Amanda Folsom, Ken Ono, and Larry Rolen
2019–2020	Humboldt grant for Sibasish Banerjee

Editorial boards

Annales Mathématiques Blaise Pascal
Archiv der Mathematik
Canadian Mathematical Society (2019-2023)
Experimental Math
Journal of Combinatorial Theory Series A
Proceedings of the AMS (until 2018)
Ramanujan Journal
Research in Number Theory
Research in the Mathematical Sciences (guest editor)

Professional Services

	Referee for many research journals including Annals, Inventiones, JAMS.
January 2008	Organizer (with O. Richter and H. Stark) of the special session “Automorphic forms and related topics” AMS national meeting, San Diego.

2006–2007	Organizer (with R. Jones) of the number theory seminar of the Univ. Wisconsin/Madison.
2008–present	Organizer of the number theory seminar of the Univ. of Cologne.
2009–present	Organizer of the seminar “Automorphic forms” (joint with Aachen, Lille, and Siegen).
May 2009	Organizer (with D. Zagier and O. Richter) of the international conference “Mock theta functions and applications in combinatorics, algebraic geometry, and mathematical physics” at the Max Planck Institute. Organizer (with K. Ono and S. Zwegers) of the workshop “Mock modular forms in combinatorics and arithmetic geometry” at the American Institute of Mathematics, Palo Alto.
February 2011	Organizer (with L. Göttsche and D. Zagier) of the School and Conference “Modular forms and their applications in arithmetic, geometry, and physics”, Trieste.
September 2011	Organizer (with U. Görtz and D. Zagier) of the special session “Algebraic geometry and number theory”, at the DMV-Tagung, Cologne.
2011	Organizer of the seminar “Number theory and physics”, joint with Bonn.
February 2012	Organizer of the Krupp-Symposium “Modular forms, mock theta functions, and applications”, Cologne.
2012 and 2013	Member of the prize committee for the Sastra Prize.
December 2012	Organizer (with K. Alladi, B. Berndt, R. Balasubramanian, S. Murthy, and D. Prasad) of the conference “The legacy of Srinivasa Ramanujan”, Delhi, India.
March 2013	Organizer (with J. Bruinier) of the conference “Automorphic Forms and L-functions”, Darmstadt.
March 2015	Organizer (with I. Burban, P. Littelmann, M. Mertens, and L. Rolén) of the school “Modular invariance and characters of representation”, Bonn.
May 2015	Organizer (with J. Lovejoy and O. Richter) of the conference “Automorphic forms: advances and applications”, Marseille, France.
May 2017	Organizer (with M. Kontsevich, P. Moree, K. Ono, and M. Westerholt–Raum) of the ERC-conference “Modular forms are everywhere”, Max-Planck, Bonn.
May 2017	Organizer (with S. Ehlen, L. Rolén, and M. Woodbury) of the ERC-school “Modular forms are everywhere”, Max-Planck, Bonn.
July 2018	Part of the Scientific Committee of the XV. Canadian Number Theory Association Conference, Laval University, Quebec, (upcoming).
September 2018	Organizer (with P. Moree) of the conference “ELAZ”.

Advising

State doctorate

2019	Michael Mertens, “Some applications of singular moduli and complex multiplications”
2020	Stephan Ehlen, “Modularity of generating series, regularized theta lifts, and vector-valued modular forms”

Post-docs

2009–2013	Ben Kane
2010–2012	Karl Mahlburg (Humboldt fellow)
2010–2012	Anton Mellit
2012–2013	Jan Manschot (Krupp fellow)
2012–2013	Maryna Viazovska
2013–2015	Larry Rolen
2014–2016	Matthew Krauel
2015–2017	Mike Woodbury
2016–2017	Michael Griffin
2017	Claudia Alfes
2017–2018	Jie Zhou
2017–2018	Sun Kim
2017–2019	Michael Mertens
2018–2019	Andy Kong
2017–2019	Chris Jennings-Shaffer
2018–2020	Markus Schwagenscheidt
2017–present	Caner Nazaroglu
2019–2021	Sibasish Banerjee (Humboldt fellow)
2020–present	Johann Franke
2021–present	Walter Bridges
2021–present	Siu Hang Man
2021–present	Jonas Kaszian
2022–present	Ian Wagner

PhD students

spring 2012	Matthias Waldherr “Arithmetic and Asymptotic Properties of Mock Theta Functions and Mock Jacobi Forms”
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spring 2014	Michael Mertens “Mock Modular Forms and Class Numbers of Quadratic forms”
summer 2014	René Olivetto “Harmonic Maass forms, Jacobi forms, and Applications to Lie Superalgebras”
spring 2016	Jose Miguel Zapata Rolon “Exact and asymptotic formulas for the Fourier coefficients of automorphic forms”
winter 2017	Steffen Löbrich “On Divisors, Congruences, and Symmetric Powers of Modular Forms”
spring 2018	Min-Joo Jang “Mock theta functions and asymptotics for partition-theoretic functions”
summer 2019	Jonas Kaszián “Indefinite Theta Functions and Higher Depth Mock Modular Forms”
summer 2020	Alexandru Ciolan “Asymptotics, Equidistribution and Inequalities for Partition Functions”
summer 2021	Josh Males “Modular Forms: Constructions and Applications”
2019–present	Giulia Cesana
2019–present	Taylor Garnowski
2020–present	Andreas Mono
2021–present	Benjamin Brindle
2021–present	Maja Gschnitzer

Diploma students

summer 2009	Bojan Frackenpohl “Über die Anzahl der Partitionen mit paarweise verschiedenen geraden Anteilen”
spring 2013	Jose Miguel Zapata Rolon “Asymptotische Werte von Crank-Differenzen”
2013–2014	Ben Engel “Concave partition functions”
2013–2014	Johanna Dahlem “Mock-Modulformen and their shadows”

Master students

winter 2013	Roland Mainka “Asymptotic formulas for stack generating functions”
spring 2014	Miriam Weingarten “Congruence properties of the k -regular partition function”
winter 2018/19	Robin Sauer “Modular forms associated to real quadratic fields”
spring 2019	Giulia Cesana “Regularisierte Petersson-Skalarprodukte”
summer 2019	Marcel Kraft “Asymptotic formulas for weighted partitions”
summer 2019	Mohammed Sultana “Generating Functions of F -Partitions”
summer 2019	Max Müller “Converse Theorems”

- winter 2019/20 Marvin Fabrizius “Asymptotisches Verhalten der Bipartitionsfunktionen”
- summer 2020 Lukas Gebert “Nonholomorphic Eisenstein series”
- summer 2020 Cagdas Demir “The Riemann Hypothesis for Period Polynomials of Modular Forms and Rational Periods”

Bachelor students

- summer 2011 Miriam Azoulay “Ein Vergleichskriterium für getrimmte Verteilungen”
- summer 2014 Dennis Khaskin “Die Mellin-Transformation und verwandte analytische Methoden”
- winter 2015/16 Max Müller “Über einen Zusammenhang zwischen partiellen und Mock-Theta-Funktionen durch Rademachers Entwicklung des Null Prinzips”
- winter 2016/17 Marcel Japes “Differentialoperatoren auf Modulformen”
- winter 2016/17 Alicia Buhk “Beweis von Eisensteinreihenidentitäten mit elementaren Mitteln”
- summer 2017 Nils Gubela “Nullstellen von Modulformen”
- summer 2017 Laura Maria Poreschack “An extension of Hecke’s trick for the modularity property of Eisenstein series”
- winter 2017/18 Alina Jürgens “Formulas for $1/\pi$ ”
- winter 2017/18 Stephan Thullen “Modified Bernoulli Numbers”
- winter 2017/18 Philipp Willmroth “Exact and asymptotic formulas for the partition function”
- winter 2017/18 Carsten Mitzkus “Fourier coefficients of a certain η -quotient”
- winter 2017/18 Tina Steinbach
- winter 2017/18 Asli Tugce Ünüvar
- summer 2018 Nina Samek
- summer 2018 Lara Flato
- winter 2018/19 Pauline Scharf “Fourier coefficients of Siegel Eisenstein series”
- winter 2018/19 Arthur Schain “Hecke Theta Series”
- summer 2020 David Wambach “Ramanujans Definition der Mock-Thetafunktionen”
- winter 2021/22 Hei Loi Lin “Superkongruenzen”

Publications

- 2005 K. Bringmann and K. Ono, *Identities for traces of singular moduli* Acta Arithmetica **119**, 317–327.
- 2005 K. Bringmann, K. Ono, and J. Rouse, *Traces of singular moduli on Hilbert modular surfaces* International Mathematics Research Notices **47**, 2891–2912.

- 2006 K. Bringmann, *Asymptotic formulas for some restricted partition functions*
Ramanujan Journal **12**, 257–266.
- 2006 K. Bringmann, *Lifting maps from a vector space of Jacobi cusp forms to a subspace of elliptic modular forms*
Mathematische Zeitschrift **253**, 735–752.
- 2006 K. Bringmann, *Estimates of Fourier coefficients of Siegel cusp forms for subgroups and in the case of small weight*
Journal of the London Mathematical Society **73**, 31–47.
- 2006 K. Bringmann and K. Ono, *The $f(q)$ mock theta function conjecture and partition ranks*
Inventiones Mathematicae **165**, 243–266.
- 2006 K. Bringmann, B. Kane, and W. Kohlen, *On the boundary behavior of automorphic forms*
International Journal of Number Theory **2**, 187–194.
- 2007 K. Bringmann and K. Ono, *Arithmetic properties of coefficients of half-integral weight Maass-Poincaré series*
Mathematische Annalen **337**, 591–612.
- 2007 K. Bringmann and K. Ono, *An arithmetic formula for the partition function*
Proceedings of the American Mathematical Society **135**, 3507–3514.
- 2007 K. Bringmann, C. Conley, and O. Richter, *Maass-Jacobi forms over complex quadratic fields*
Mathematical Research Letters **14**, 137–156.
- 2007 K. Bringmann and H. Swisher, *On a conjecture of Koike on identities between Thompson series and Roger-Ramanujan functions*
Proceedings of the American Mathematical Society **135**, 2317–2326.
- 2007 K. Bringmann and T. Yang, *On Jacobi Poincaré series of small weight*
International Mathematics Research Notices **2007**.
- 2007 K. Bringmann and K. Ono, *Lifting elliptic cusp forms to Maass forms with an application to partitions*
Proceedings of the National Academy of Sciences (USA) **104**, 3725–3731.
- 2007 K. Bringmann and B. Heim, *Ramanujan type congruences and Jacobi forms*
International Mathematics Research Notices **2007**.
- 2007 K. Bringmann and J. Lovejoy, *Dyson’s rank, overpartitions, and weak Maass forms*
International Mathematics Research Notices **2007**.
- 2008 K. Bringmann, *On the explicit construction of higher deformations of partition statistics*
Duke Mathematical Journal **144**, 195–233.

- 2008 K. Bringmann and J. Lovejoy, *Rank and congruence for overpartition pairs*
International Journal of Number Theory **4**, 303–322.
- 2008 K. Bringmann, K. Ono, and R. Rhoades, *Eulerian series as modular forms*
Journal of the American Mathematical Society **21**, 1085–1104.
- 2009 K. Bringmann and D. Penniston, *Arithmetic properties of non-harmonic weak
Maass forms*
Proceedings of the American Mathematical Society **137**, 825–833.
- 2009 K. Bringmann and S. Hayashida, *A Converse Theorem for Hilbert-Jacobi forms*
Rocky Mountain Journal of Mathematics **39**, 423–435.
- 2009 K. Bringmann, *Asymptotics for rank partition functions*
Transactions of the American Mathematical Society **361**, 3483–3500.
- 2009 K. Bringmann, *On certain congruences for Dyson’s ranks*
International Journal of Number Theory **5**, 573–584.
- 2009 K. Bringmann and J. Lovejoy, *Overpartitions and class numbers of binary
quadratic forms*
Proceedings of the National Academy of Sciences (USA) **106**, 5513–5516.
- 2009 K. Bringmann, F. Garvan, and K. Mahlburg, *Partition statistics and quasihar-
monic Maass forms*
International Mathematics Research Notices **2009**, 63–97.
- 2009 K. Bringmann, J. Lovejoy, and R. Osburn, *Rank and crank moments for over-
partitions*
Journal of Number Theory **129**, 2567–2574.
- 2009 K. Bringmann, K. Ono, and A. Folsom, *q-series and weight 3/2 Maass forms*
Compositio Mathematica **145**, 541–552.
- 2009 K. Bringmann and K. Mahlburg, *Inequalities between crank and rank moments*
Proceedings of the American Mathematical Society **137**, 2567–2574.
- 2009 K. Bringmann and K. Ono, *Some characters of Kac and Wakimoto and non-
holomorphic modular functions*
Mathematische Annalen **345**, 547–558.
- 2010 K. Bringmann, J. Lovejoy, and R. Osburn, *Automorphic properties of generating
functions for generalized rank moments and Durfee symbols*
International Mathematics Research Notices **2010**, 238–260.
- 2010 K. Bringmann and S. Zwegers, *Rank-crank type PDE’s and non-holomorphic
Jacobi forms*
Mathematical Research Letters **17**, 589–600.
- 2010 K. Bringmann and K. Ono, *Dyson’s ranks and Maass forms*
Annals of Mathematics **171**, 419–449.
- 2010 K. Bringmann and B. Kane, *Inequalities for differences of Dyson’s rank for all*

odd moduli

Mathematical Research Letters **17**, 927–942.

- 2010 K. Bringmann and O. Richter, *Zagier-type dualities and lifting maps for harmonic Maass-Jacobi forms*
Advances in Mathematics **225**, 2298–2315
- 2011 K. Bringmann, K. Mahlburg, and R. Rhoades, *Asymptotics for rank and crank moments*
Bulletin of the London Mathematical Society **43**, 661–672.
- 2011 K. Bringmann and B. Kane, *Multiplicative q -hypergeometric series arising from real quadratic fields*
Transactions of the American Mathematical Society **363**, 2191–2209.
- 2011 K. Bringmann and K. Mahlburg, *An extension of the Hardy-Ramanujan circle method and applications to partitions without sequences*
American Journal of Mathematics **133**, 1151–1178.
- 2011 K. Bringmann and O. Richter, *Exact formulas for coefficients of Jacobi forms*
International Journal of Number Theory **7**, 825–833.
- 2011 C. Alfes, K. Bringmann, and J. Lovejoy, *Automorphic properties of generating functions for generalized odd rank moments and odd Durfee symbols*
Proceedings of the Cambridge Philosophical Society **151**, 385–406.
- 2011 S. Ahlgren, K. Bringmann, and J. Lovejoy, *l -adic properties of smallest parts functions*
Advances in Mathematics **228**, 629–645.
- 2012 K. Bringmann and B. Kane, *Inequalities for full rank differences of 2-marked Durfee symbols*
Journal of Combinatorial Theory Series A **119**, 483–501.
- 2012 K. Bringmann, C. Conley, and O. Richter, *Jacobi forms over complex quadratic fields via the cubic Casimir operator*
Commentarii Mathematici Helvetici **87**, 825–859.
- 2012 K. Bringmann and K. Mahlburg, *Improved bounds on metastability thresholds and probabilities for generalized bootstrap percolation*
Transactions of the American Mathematical Society **364**, 3829–3859.
- 2012 K. Bringmann, P. Guerzhoy, and B. Kane, *Mock modular forms as p -adic modular forms*
Transactions of the American Mathematical Society **364**, 2393–2410.
- 2012 K. Bringmann, M. Raum, and O. Richter, *Kohnen’s limit process for real-analytic Siegel modular forms*
Advances in Mathematics **231**, 1100–1118.
- 2013 K. Bringmann and J. Manschot, *From sheaves on P^2 to generalizations of the Rademacher expansion*
American Journal of Mathematics **135**, 1039–1065.

- 2013 K. Bringmann, P. Guerzhoy, Z. Kent, and K. Ono, *Eichler-Shimura theory for mock modular forms*
Mathematische Annalen **355**, 1085–1121.
- 2013 K. Bringmann and A. Folsom, *On the asymptotic behavior of Kac-Wakimoto characters*
Proceedings of the American Mathematical Society **141**, 1567–1576.
- 2013 K. Bringmann and K. Mahlburg, *Asymptotic formulas for coefficients of Kac-Wakimoto characters*
Mathematical Proceedings of the Cambridge Philosophical Society **155**, 51–72.
- 2013 K. Bringmann, K. Mahlburg, and A. Mellit, *Convolution bootstrap percolation models, Markov-type stochastic processes, and mock theta functions*
International Mathematics Research Notices **2013**, 971–1013.
- 2013 K. Bringmann, N. Diamantis, and M. Raum, *Mock period functions, sesquiharmonic Maass forms, and non critical values of L-functions*
Advances in Mathematics **233**, 115–134.
- 2013 K. Bringmann and A. Folsom, *On a conjecture of B. Berndt and B. Kim*
Ramanujan Journal **32**, 1–4.
- 2013 K. Bringmann, B. Kane, and M. Viazovska, *Theta lifts and local Maass forms*
Mathematical Research Letters **20**, 213–234.
- 2013 K. Bringmann and S. Murthy, *On the positivity of black hole degeneracies in string theory*
Communications in Number Theory and Physics **7**, 15–56.
- 2013 K. Bringmann, A. Holroyd, K. Mahlburg, and M. Vlasenko, *k-run overpartitions and mock theta functions*
Quarterly Journal of Mathematics **64**, 1009–1021.
- 2013 K. Bringmann and J. Manschot, *Asymptotic formulas for coefficients of inverse theta functions*
Communications in Number Theory and Physics **7**, 497–513.
- 2014 K. Bringmann, K. Mahlburg, and R. Rhoades, *Taylor coefficients of Mock-Jacobi forms and moments of partition statistics*
Mathematical Proceedings of the Cambridge Philosophical Society **157**, 231–251.
- 2014 K. Bringmann and A. Folsom, *Almost harmonic Maass forms and Kac-Wakimoto characters*
Journal für die reine und angewandte Mathematik **694**, 179–202.
- 2014 K. Bringmann, K. Fricke, and Z. Kent, *Special L-values and periods of weakly holomorphic modular forms*
Proceedings of the American Mathematical Society **142**, 3425–3439.
- 2014 K. Bringmann and K. Mahlburg, *Asymptotic inequalities for positive crank and*

rank moments

Transactions of the American Mathematical Society **366**, 1073–1094.

- 2014 K. Bringmann, B. Kane, and S. Zwegers, *On a completed generating function of locally harmonic Maass forms*
Compositio Mathematica **150**, 749–762.
- 2014 K. Bringmann, C. Calinescu, A. Folsom, and S. Kimport, *Graded dimensions of principal subspaces and modular Andrews-Gordon series*
Communications in Contemporary Mathematics **16**, 1350050.
- 2014 K. Bringmann, P. Guerzhoy, and B. Kane, *Shintani lifts and fractional derivatives of harmonic weak Maass forms*
Advances in Mathematics **255**, 641–671.
- 2014 K. Bringmann and K. Mahlburg, *Asymptotic formulas for stacks and unimodal sequences*
Journal of Combinatorial Series A **126**, 194–215.
- 2014 K. Bringmann, Y. Li, and R. Rhoades, *Asymptotics for the number of row Fishburn matrices*
European Journal of Combinatorics **41**, 183–196.
- 2014 K. Bringmann, T. Creutzig, and L. Rolin, *Negative index Jacobi forms and quantum modular forms*
Research in the Mathematical Sciences **1:11**.
- 2015 K. Bringmann, M. Raum, and O. Richter, *Harmonic Maass-Jacobi forms with singularities and theta-like decomposition*
Transactions of the American Mathematical Society **367**, 6647–6670.
- 2015 K. Bringmann, A. Folsom, and R. Rhoades, *Unimodal sequences and strange functions: A family of quantum modular forms*
Pacific Journal of Mathematics **274**, 1–25.
- 2015 K. Bringmann and K. Mahlburg, *False theta functions and companions to Capparelli's identities*
Advances in Mathematics **278**, 121–136.
- 2015 K. Bringmann, P. Guerzhoy, and B. Kane, *On cycle integrals of weakly holomorphic modular forms*
Mathematical Proceedings of the Cambridge Philosophical Society **158**, 439–449.
- 2015 G. Andrews, K. Bringmann, and K. Mahlburg, *Double series representations for Schur's partition function and related identities*
Journal of Combinatorics series A **132**, 102–119.
- 2015 K. Bringmann and A. Milas, *W-algebras, false theta functions, and quantum modular forms I*
International Mathematics Research Notices **21**, 11351–11387.

- 2015 K. Bringmann, J. Duncan, and L. Rolén, *Maass-Jacobi Poincaré series and Mathieu moonshine*
Advances in Mathematics **281**, 248–278.
- 2015 K. Bringmann and L. Rolén, *Radial limits of mock theta functions*
Research in the Mathematical Sciences **2:17**.
- 2015 K. Bringmann and A. Milas, *On the Fourier expansion of Bloch-Okounov n -point function*
Journal of Combinatorial Theory A **36**, 201–219.
- 2015 K. Bringmann, J. Dousse, J. Lovejoy, and K. Mahlburg, *Overpartitions with restricted odd differences*
The Electronic Journal of Combinatorics **22**.
- 2015 K. Bringmann, B. Kane, and W. Kohlen, *Locally harmonic Maass forms and the kernel of the Shintani lift*
International Mathematics Research Notices **1**, 3185–3224.
- 2015 K. Bringmann, L. Rolén, and S. Zwegers, *On the modularity of certain functions from Gromov-Witten theory of elliptic orbifolds*
Royal Society Open Science, **2**, 150310.
- 2015 K. Bringmann, P. Guerzhoy, and B. Kane, *Half-integral weight p -adic coupling of weakly holomorphic and holomorphic modular forms*
Research in Number Theory **1:26**, 1–13.
- 2015 K. Bringmann, K. Mahlburg, and K. Nataraj, *Distinct parts partitions without sequences*
Electronic Journal of Combinatorics **22**.
- 2016 K. Bringmann and J. Dousse, *Dyson’s crank conjecture and the uniform asymptotic behavior of certain inverse theta functions*
Transactions of the American Mathematical Society **368**, 3141–3155.
- 2016 K. Bringmann, L. Rolén, and S. Zwegers, *On the Fourier coefficients of negative index meromorphic Jacobi forms*
Research in the Mathematical Sciences **3**, 1–9.
- 2016 K. Bringmann, J. Lovejoy, and K. Mahlburg, *A partition identity and the universal mock theta function $g_2(x; q)$*
Mathematical Research Letters **23**, 67–80.
- 2016 K. Bringmann and B. Kane, *Modular local polynomials*
Mathematical Research Letters **23**, 973–987.
- 2016 K. Bringmann and B. Kim, *On the asymptotic behavior of unimodal rank generating functions*
Journal of Mathematical Analysis and Applications **435**, 627–645.
- 2016 K. Bringmann, J. Manschot, and L. Rolén, *Identities for generalized Appell functions and the blow-up formula*
Letters in Mathematical Physics, 1-17.

- 2016 K. Bringmann, M. Mertens, and K. Ono, *p-adic properties of modular shifted convolution Dirichlet series*
 Proceedings of the American Mathematical Society **144**, 1439–1451.
- 2016 K. Bringmann and B. Kane, *A problem of Petersson about weight 0 meromorphic modular forms*
 Research in Mathematical Sciences **3:24**, 1–31.
- 2016 K. Bringmann, O. Richter, and M. Westerholt–Raum, *Almost holomorphic Poincaré series corresponding to products of harmonic Siegel–Maass form*
 Research in the Mathematical Sciences **3:30**.
- 2017 K. Bringmann, *Improved bounds for Fourier coefficients of Siegel modular forms*
 Journal of Mathematical Analysis and Applications **451**, 1123–1132.
- 2017 J. Boehm, K. Bringmann, A. Buchholz, and H. Markwig, *Tropical mirror symmetry for elliptic curves*
 Journal für die Reine und Angewandte Mathematik **732**, 211–246.
- 2017 K. Bringmann and A. Milas, *W-algebras, higher rank false theta functions and quantum dimensions*
 Selecta Mathematica **23**, 1249–1278.
- 2017 K. Bringmann, K. Mahlburg, and A. Milas, *The Lusztig–Macdonald–Wall conjectures and q-difference equations*
 Contemporary Mathematics **695**, 41–49.
- 2017 K. Bringmann and B. Kane, *Ramanujan and coefficients of meromorphic modular forms*
 Journal de Mathématiques Pures et Appliquées **107**, 100–122.
- 2017 K. Bringmann and R. Olivetto, *Kac–Wakimoto characters and non-holomorphic Jacobi forms*
 Transactions of the American Mathematical Society **369**, 1163–1184.
- 2017 K. Bringmann, N. Diamantis, and S. Ehlen, *Regularized inner products and errors of modularity*
 International Mathematics Research Notices **2017**, 7420–7458.
- 2017 K. Bringmann, B. Kane, D. Parry, and R. Rhoades, *On the Andrews–Zagier asymptotics for partitions without sequences*
 Advances in Mathematics **309**, 436–451.
- 2017 K. Bringmann, A. Folsom, and A. Milas, *Asymptotic behavior of partial and false theta functions arising from Jacobi forms and regularized characters*
 Journal of Mathematical Physics **58**, 011702.
- 2018 K. Bringmann and S. Kudla, *A classification of harmonic Maass forms*
 Mathematische Annalen **370**, 1729–1758.
- 2018 K. Bringmann, C. Jennings-Shaffer, and K. Mahlburg, *On a modularity conjecture of Andrews, Dixit, Schultz, and Yee for a variation of Ramamunjan’s $\omega(q)$*
 Advances in Mathematics **325**, 505–532.

- 2018 K. Bringmann, B. Kane, S. Löbrich, K. Ono, and L. Rolén, *On Divisors of Modular Forms*
Advances in Mathematics **329**, 541–554.
- 2018 K. Bringmann, J. Kaszián and, L. Rolén, *Indefinite theta functions arising in Gromov-Witten Theory of elliptic orbifolds*
Cambridge Journal of Mathematics **6**, 25–57.
- 2018 K. Bringmann, *Taylor coefficients of non-holomorphic Jacobi forms and applications*
Research in the Mathematical Sciences **5:15**.
- 2018 K. Bringmann, J. Lovejoy, and L. Rolén, *On some special families of q -hypergeometric Maass forms*, International Mathematics Research Notices **2018**, 5537–5561.
- 2018 K. Bringmann and B. Kane, *Regularized inner products and weakly holomorphic Hecke eigenforms*
Journal of Physics A: Mathematical and Theoretical **51**, 044001.
- 2019 K. Bringmann and B. Kane, *Sums of class numbers and mixed mock modular forms*
Mathematical Proceedings of the Cambridge Philosophical Society **162**, 321–333.
- 2019 K. Bringmann, B. Kane, and A. von Pippich, *Regularized inner products of meromorphic modular forms and higher Green’s functions*
Communications in Contemporary Mathematics **21**, 1850029.
- 2019 K. Bringmann, B. Kane, and P. Jenkins, *Differential operators on polar harmonic Maass forms and elliptic duality*
The Quarterly Journal of Mathematics **70**, 1181–1207.
- 2019 K. Bringmann and C. Nazaroglu, *A framework for modular properties of false theta functions*
Research in the Mathematical Sciences **6:30**.
- 2019 K. Bringmann and C. Jennings-Shaffer, *A Note on Andrews Partitions with Parts Separated by Parity*
Annals of Combinatorics **23**, 573–578.
- 2019 K. Bringmann, C. Jennings-Shaffer, K. Mahlburg, and R. Rhoades, *Peak positions of strongly unimodal sequences*
Transactions of the American Mathematical Society **372**, 7087–7109.
- 2019 K. Bringmann and C. Nazaroglu, *An exact formula for $U(3)$ Vafa-Witten invariants on \mathbb{P}^2*
Transactions of the American Mathematical Society **372**, 6135–6159.
- 2019 K. Bringmann, J. Kaszian, and A. Milas, *Vector-valued higher depth quantum modular forms and higher Mordell integrals*
Journal of Mathematical Analysis and Applications **480**, 123397.

- 2019 K. Bringmann, K. Mahlburg, and A. Milas, *On characters of $L_{\mathfrak{sl}_n}(-\Lambda_0)$ -modules*
Communications in Contemporary Mathematics, 1950030.
- 2019 K. Bringmann, J. Kaszian, and A. Milas, *Higher depth quantum modular forms, multiple Eichler integrals, and \mathfrak{sl}_3 false theta functions*
Research in the Mathematical Sciences **6:20**.
- 2019 K. Bringmann, and C. Jennings–Shaffer, *Unimodal sequence generating functions arising from partition ranks*
Research in Number Theory **5:25**.
- 2020 C. Alfes–Neumann, K. Bringmann, and M. Schwagenscheidt, *On the rationality of cycle integrals of meromorphic modular forms*
Mathematische Annalen **376**, 243–266.
- 2020 K. Bringmann, K. Mahlburg, and A. Milas, *Quantum modular forms and plumbing graphs of 3-manifolds*
Journal of Combinatorial Theory, Series A **170**, 105145.
- 2020 C. Alfes–Neumann, K. Bringmann, J. Males, and M. Schwagenscheidt, *Cycle integrals of meromorphic modular forms and coefficients of harmonic Maass forms*
Journal of Mathematical Analysis and Applications, 124898.
- 2020 K. Bringmann, C. Jennings–Shaffer, and K. Mahlburg, *Proofs and reductions of various conjectured partition identities of Kanade and Russell*
Journal für die reine und angewandte Mathematik (Crelle’s Journal) **766**, 109–135.
- 2020 K. Bringmann, M. Krauel, and M. Tuite, *Zhu reduction for Jacobi n -point functions and applications*
Transactions of the American Mathematical Society **373**, 3261–3293.
- 2020 K. Bringmann and B. Kane, *An extension of Rohrlich’s Theorem to the j -function*
Forum of Mathematics, Sigma **8**, 1–33.
- 2020 K. Bringmann and C. Jennings–Shaffer, *Some q -series identities extending work of Andrews, Crippa, and Simon on sums of divisors functions*
Discrete Mathematics (Elsevier) **343**, 112019.
- 2020 K. Bringmann and B. Kane *Ramanujan-like formulas for Fourier coefficients of all meromorphic cusp forms*
Advances in Mathematics **373**, 107308.
- 2020 K. Bringmann, S. Ehlen, and M. Schwagenscheidt, *On the modular completion of certain generating functions*
International Mathematics Research Notices, rnz338.
- 2020 K. Bringmann, K. Mahlburg, and A. Milas, *Higher depth quantum modular forms and plumbed 3-manifolds*
Letters in Mathematical Physics **110(10)**, 2675–2702.

- 2020 K. Bringmann, J. Kaszian, A. Milas, and S. Zwegers, *Rank two false theta functions and Jacobi forms of negative matrix index*
Advances in Applied Mathematics **112**, 101946.
- 2020 K. Bringmann, J. Kaszian, and J. Zhou *Generating functions of planar polygons from homological mirror symmetry of elliptic curves*
Research in Number Theory **6:28**.
- 2020 K. Bringmann, C. Jennings-Shaffer, and K. Mahlburg, *The asymptotic distribution of the rank for unimodal sequences*
Journal of Number Theory, doi:10.1016/j.jnt.2020.11.016.
- 2021 K. Bringmann, M. Berg, and T. Gannon, *Massive deformations of Maass forms and Jacobi forms*
Communications in Number Theory and Physics **15**, 575–603.
- 2021 K. Bringmann, J. Kaszian, A. Milas, and C. Nazaroglu, *Integral representations of rank two false theta functions and their modularity properties*
Research in the Mathematical Sciences **8:54**, doi:10.1007/s40687-021-00284-1.
- 2021 K. Bringmann, C. Jennings-Shaffer, and K. Mahlburg, *On a Tauberian theorem of Ingham and Euler-Maclaurin summation*
The Ramanujan Journal, doi:10.1007/s11139-020-00377-5.
- 2021 K. Bringmann, B. Kane, and J. Males, *On t -core and self-conjugate $(2t-1)$ -core partitions in arithmetic progressions*
Journal of Combinatorial Series A **183**, 105479.
- 2022 K. Bringmann and B. Kane, *The degenerate parts of spaces of meromorphic cusp forms under a regularized inner product*
Advances in Mathematics, doi: 10.48550/arXiv.2008.02210.
- accepted K. Bringmann and B. Kane, *Class numbers and representations by ternary quadratic forms with congruence conditions*
Mathematics of Computation.
- accepted K. Bringmann, B. Kane, L. Rolén, and Z. Tripp, *Fractional partitions and conjectures of Chern-Fu-Tang and Heim-Neuhauser*
Transactions of the American Mathematical Society.
- accepted K. Bringmann, A. Caviedes Castro, S. Sabatini, and M. Schwagenscheidt, *Rigidity of elliptic genera: From number theory to geometry and back*
International Mathematics Research Notices.
- submitted K. Bringmann, B. Kane, and S. Pujahari, *Distribution of moments of trace of Frobenius in arithmetic progressions and holomorphic projection.*
- submitted K. Bringmann, C. Jennings-Shaffer, and A. Milas, *Graph Schemes, Graph Series, and Modularity.*
- submitted K. Bringmann and W. Bridges, *Statistics for Unimodal Sequences.*

- submitted K. Bringmann and J. Franke, *An asymptotic formula for the number of n -dimensional representations of $SU(3)$.*
- submitted K. Bringmann, K. Gomez, L. Rolen, and Z. Tripp, *Infinite families of crank functions, Stanton-type conjectures, and unimodality.*
- submitted K. Bringmann, W. Craig, J. Males, and K. Ono, *Distributions on partitions arising from Hilbert schemes and hook lengths.*
- submitted K. Bringmann, B. Kane, and S. Pujahari, *Formulas for moments of class numbers in arithmetic progressions.*
- submitted K. Bringmann, J. Kaszian, A. Milas, and C. Nazaroglu, *Higher depth false modular forms.*
- submitted K. Bringmann and B. Kane, *Conjectures of Sun about sums of polygonal numbers.*
- submitted K. Bringmann and B. Kane, *Generalized L -functions for meromorphic modular forms and their relation to the Riemann zeta function.*
- submitted K. Bringmann, B. Kane, and S. Pujahari, *Odd moments for the trace of Frobenius and the Sato–Tate conjecture in arithmetic progressions.*

Refereed Conference Proceedings

- 2004 K. Bringmann, *On Fourier coefficients of Siegel cusp forms*
Proceedings of the ELAZ Conference 2004, 34-43.
- 2006 K. Bringmann, *Mock theta functions, weak Maass forms, and applications*
Proceedings of the Conference ‘Modulformen’ in Schiermonnikoog.
- 2008 K. Bringmann and K. Ono, *Coefficients of harmonic weak Maass forms,*
Proceedings of the Conference on Partitions, q -Series and Modular Forms,
Gainesville.
- 2010 K. Bringmann and B. Kane, *New identities involving sums of the tails related to real quadratic fields*
Ramanujan Journal **23** (Special volume of the Ramanujan Journal in celebration of G. Andrews’ 70th birthday), 243-521.
- 2011 K. Bringmann, K. Hikami, and J. Lovejoy, *On the modularity of the unified WRT invariants of certain Seifert manifolds*
Advances in Applied Mathematics **46**, Special volume in honor of D. Stanton.
- 2012 K. Bringmann, A. Folsom, and R. Rhoades, *Partial theta functions and mock modular forms on q -hypergeometric series,*
Ramanujan Journal, Special volume in honor of Ramanujan’s 125th birthday **29**, 295-310.
- 2013 K. Bringmann, B. Kane, and R. Rhoades, *Duality and differential operators for harmonic Maass forms,*
Developments in Mathematiks, Special volume in honor of L. Ehrenpreis **28**, 85-106.

- 2013 K. Bringmann and B. Kane, *Second order cusp forms and mixed mock modular forms*,
Ramanujan Journal, Special volume in honor of Ismail and Stanton **31**, 147-161.
- 2013 K. Bringmann, J. Lovejoy, and K. Mahlburg, *On q -difference equations for partitions without k -sequences*
The legacy of Ramanujan, Ramanujan Mathematical Society **20**, 129-137.
- 2015 K. Bringmann, A. Folsom, and K. Mahlburg, *Quasimodular forms and $sl(m|m)^\wedge$ characters*
Ramanujan Journal **36**, Special volume in honor of Basil Gordon, 103-116.
- 2016 K. Bringmann and L. Rolén, *Half-integral weight Eichler integrals and quantum modular forms*
Journal of Number Theory, Special volume in honor of Winnie Li **161**, 240-254.
- 2016 K. Bringmann and A. Folsom, *Quantum Jacobi forms and finite evaluations of unimodal rank generating functions*
Archiv der Mathematik **107**, Special volume in honor of von E. Gekeler, 367-378.
- 2016 K. Bringmann and L. Rolén, *Half-integral weight Eichler integrals and quantum modular forms*
Journal of Number Theory, Special volume in honor of von Winnie Li **161**, 240-254.
- 2017 K. Bringmann, B. Kane, S. Löbrich, K. Ono, and L. Rolén, *Number theoretic generalization of the monster denominator formula*
Journal of Physics A: Mathematical and Theoretical **50**, 473001.
- 2017 K. Bringmann, N. Andersen, and L. Rolén, *Images of Maass-Poincaré series in the lower half-plane*
Contributions in Mathematical and Computational Sciences **10**, 9-23.
- 2018 K. Bringmann and B. Kane, *Regularized inner products and weakly holomorphic Hecke eigenforms*
Journal of Physics A: Mathematical and Theoretical **51**, 044001.
- 2021 K. Bringmann, *The false theta functions of Rodgers and their modularity*
Bulletin of the London Mathematical Society **53**, 963–980.
- accepted K. Bringmann, J. Kaszian, and A. Milas, *Some examples of higher depth vector-valued quantum modular forms*
Proceedings of Ramanujan’s 130th birthday conference in Ropar.
- accepted K. Bringmann, K. Ono, and I. Wagner, *Eichler integrals of Eisenstein series as q -brackets of weighted t -hook functions on partitions*,
Ramanujan Journal, arxiv: <https://arxiv.org/abs/2009.07236>.

Books

- 2017 K. Bringmann, A. Folsom, K. Ono and L. Rolén, *Harmonic Maass forms and*

mock modular forms: theory and applications, AMS Colloquium Series.

Lecturer at Summer Schools

August 2012 *Modular forms*
Summer school “Four faces of number theory”, Würzburg.

Presentations at Conferences

- July 2006 *Freeman Dyson’s ‘Challenge for the future’: The mock theta functions* (plenary speaker),
ELAZ Conference, Ulm (Germany).
- December 2007 *Hypergeometric series, automorphic forms, and weak Maass forms* (plenary speaker),
Palmetto Number Theory Series 5, South Carolina.
- August 2012 *Asymptotic inequalities for positive crank and rank moments* (plenary speaker),
ELAZ, Würzburg (Germany).
- November 2012 *Asymptotic formulas for stacks* (plenary speaker),
Ramanujan 125 Conference, Univ. Florida.
- December 2012 *Locally Harmonic Maass Forms* (plenary speaker),
The Legacy of Shrinivasa Ramanujan, Delhi (India).
- September 2013 *Dyson’s rank, harmonic weak Maass forms, and recent developments* (plenary speaker),
Birthday conference in honor of F. Dyson’s 90th birthday
Institute for advanced studies, New York.
- February 2014 *Automorphic forms and arithmetic* (plenary speaker),
Univ. Göttingen (Germany).
- April 2014 *Negative index Jacobi forms and quantum modular forms* (plenary speaker),
LSU, Birthday Conference for Winnie Li.
- June 2014 *Decompositions of meromorphic Jacobiforms* (plenary speaker),
Canadian number theory meeting, Ottawa, Canada.
- June 2014 *Meromorphic cycle integrals* (plenary speaker),
Elefant workshop, Univ. Bonn (Germany).
- August 2015 *Polar harmonic Maass forms* (plenary speaker),
New moonshines, mock modular forms and string theory, EPSRC Durham Symposium, England.
- August 2015 *Quantum modular forms and applications* (plenary speaker),
Conference in honor of Lepowsky and Wilson, Univ. Notre Dame, USA.
- September 2015 *Meromorphic Maass forms* (plenary speaker),
Annual Conference of German Mathematicians, Univ. Hamburg (Germany).

- February 2016 *Polar harmonic Maass forms* (plenary speaker),
L-Functions and Automorphic Forms, Univ. Heidelberg (Germany).
- August 2016 *Regularized Inner Products*,
Simons Center for Geometry and Physics, Stony Brook, USA.
- November 2016 *Petersson regularized inner products*,
Workshop Spectral theory, Automorphic forms and Arithmetic, Univ. Kopen-
hagen, Denmark.
- June 2017 *Higher depth quantum modular forms*,
Conference European Women in Mathematics, Univ. Bielefeld (Germany).
- August 2017 *Higher depth quantum modular forms*,
Workshop “Low-Dimensional-Topology and Number Theory”, Mathematisches
Forschungsinstitut Oberwolfach, Germany.
- June 2018 *Higher depth quantum modular forms*,
Conference “Automorphic forms and their covers”, ETH Zürich, Switzerland.
- June 2020 *Class numbers and representations by quadratic forms*,
“Online Conference in Automorphic Forms”, Rényi Institute, Hungary.
- 40 more (on October 30th, 2018).

Colloquia and seminar talks

58 (on October 30th, 2018).

Teaching

Lectures at various levels (Bachelor, Master, PhD) including

- analysis
- analytic number theory
- business calculus
- differential equations
- elementary number theory
- linear algebra
- mathematics and biology
- modular forms
- algebra

seminars including

- asymptotic expansions
- elliptic functions
- elliptic curves

- generating functions
- Jacobi forms
- L -functions
- mock modular forms
- modular forms
- partitions
- Ramanujan
- zeta functions

March 9, 2022