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# Gerrit Bauch

game theorist, economist, mathematician

## 🏢 professional profile

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I am an economist with a strong mathematical background and a passion for game and decision theory under uncertainty. In my dissertation, I have analyzed conflict resolution under Knightian uncertainty and studied how noise impacts the category formation of languages.

## 🎓 education

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### Bielefeld University, Germany 2019–2024

*Dr. rer. pol (Ph.D. in economics)*, passed with distinction (*summa cum laude*).

*“From words of approach to words of departure: Essays on noisy communication and partnership dissolution under uncertainty”*

Supervisors: Prof. Dr. Riedel, Bielefeld University and Prof. Andreas Blume, PhD, University of Arizona.

### Heidelberg University, Germany 2015–2019

*M.Sc. in mathematics* with economics as field of application. Overall grade: 1,1.

*“Über eine Vermutung aus der Theorie Siegelscher Modulformen im Spezialfall  $g = 2$  und  $k = 5/2$ ”.*

Supervised by Prof. Dr. Rainer Weissauer, Heidelberg University.

### Heidelberg University, Germany 2012–2015

*B.Sc. in mathematics* with economics as field of application. Overall grade: 1,4.

*“Algebraisch-Geometrische Codes”.*

Supervised by Prof. Dr. Kay Wingberg, Heidelberg University.

## 🏢 research positions & work experience

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### Bielefeld University, Germany 2024–actual

*postdoctoral researcher*

Center for Mathematical Economics, Center for Uncertainty Studies (CeUS), RTG Coping with Uncertainty in Dynamic Economies (CUDE), Quantifying and Managing Uncertainty (QUAMU), CRC 1283: Taming Uncertainty.

### Bielefeld University, Germany 2019–2024

*PhD student*

Center for Mathematical Economics and the Center for Uncertainty Studies (CeUS).

### Bielefeld University, Germany 2020–2023

*IT support* at the Center for Mathematical Economics. Tasks included general user assistance, website building (XML based CMS Roxen 5 & 17) and administration, AD & GPO management and hardware and software provisioning (ivanti landesk, citrix workspace).

### Heidelberg University, Germany 2014

*undergraduate research assistant*

Chair of Labor Economics of Prof. Dr. Christina Gathmann, Alfred-Weber institute

## 📌 scientific output

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### publications

Gerrit Bauch and Frank Riedel. “The Texas Shoot-Out under Knightian uncertainty”. In: *Games and Economic Behavior* 146 (2024), pp. 35–50. ISSN: 0899-8256. DOI: <https://doi.org/10.1016/j.geb.2024.04.009>. URL: <https://www.sciencedirect.com/science/article/pii/S0899825624000605>.

## job market paper

Gerrit Bauch and Manuel Foerster. *Strategic communication of narratives*. Current version available at <https://gbauch.github.io/assets/pdf/narratives.pdf>. 2025. arXiv: 2410.23259 [econ.TH].

## R&R

Gerrit Bauch. “Effects of Noise on the Concept Formation of Languages”. In: *Center for Mathematical Economics Working Papers* (2021). R&R (minor revision, 2nd round) in the *International Journal of Game Theory*. Part of PhD thesis. Current version available at [https://gbauch.github.io/assets/pdf/Effects\\_of\\_noise.pdf](https://gbauch.github.io/assets/pdf/Effects_of_noise.pdf).

## working papers

Gerrit Bauch and Manuel Foerster. *Strategic communication of narratives*. Current version available at <https://gbauch.github.io/assets/pdf/narratives.pdf>. 2025. arXiv: 2410.23259 [econ.TH].

Gerrit Bauch and Lorenz Hartmann. *Dependence uncertainty: a decision-theoretic approach*. 2025. arXiv: 2503.13416 [econ.TH].

Gerrit Bauch. “Underreaction and dynamic inconsistency in communication games under noise”. In: *arXiv* (2023). Part of PhD thesis. arXiv: 2311.12496 [econ.TH].

Gerrit Bauch. *Independence and indifferent points imply continuity*. 2025. arXiv: 2411.17883 [econ.TH].

## work in progress

Gerrit Bauch, Arthur Dolgoplov, and Manuel Foerster. *Strategic communication of narratives: an experiment*. An experimental study on how individuals strategically implement narratives and how their peers react. Data collection of the experiment running until mid November 2025 at the WiSo lab in Hamburg. 2025.

Gerrit Bauch and Manuel Foerster. *Robust communication of narratives*. A network-based extension of the 2021 AER paper *Using Models to Persuade* by Schwarzstein & Sunderam. 2025.

Gerrit Bauch and Guillaume Pommey. *The economic role of shotgunfunds on efficient partnership dissolutions under liquidity constraints*. A theoretical analysis of how shotgunfunds improve efficiency of partnership dissolutions when co-owners are liquidity constraint. 2025.

Gerrit Bauch and Lars Müller. *Calling the Price or Making the Call? Role Preferences in Texas Shoot-Out clauses*. Theoretical foundation why Shoot-Out clauses stabilize co-owned partnerships, including generalizations of a McAfee 92 result to arbitrary risk aversion and ex-post scenarios. 2025.

Gerrit Bauch, Max Nendel, and Alessandro Sgarabottolo. *Classification of extreme points of probability measures under linear constraints by absolute continuity and  $f$ -divergencies*. We provide two characterizations of the extreme points of probability measures under linear constraints for arbitrary measurable spaces: one as a suitable minimum w.r.t. absolute continuity, one by local maximizers of certain  $f$ -divergencies. 2025.

## dissertation

Gerrit Bauch. “From words of approach to words of departure: Essays on noisy communication and partnership dissolution under uncertainty”. In: *Bielefeld University library* (2024). Publicly available at <https://pub.uni-bielefeld.de/record/2988256>.

## research stays

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### University of Basel, Switzerland

2024 & 2025

Guest researcher at Basel University, March 18–22, 2024 & February 23–March 2, 2025. Invited by Georg Nöldeke and Lorenz Hartmann.

### University of Arizona, USA

2022

Research stay from January to May 2022 at the Eller College of Management, University of Arizona. Financial support through a DAAD scholarship and a BGTS mobility grant. Invited by Prof. Andreas Blume, PhD.

## referee activities

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Economic Theory, Games and Economic Behavior, International Journal of Game Theory, Journal of Economic Behavior & Organization

## grants, scholarships, nominations & rewards

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- ZiF Focus Group Workshop for QUAMU in March 2026, joint with Frank Riedel & Maren Schmeck (24.000€) **2025**
- Establishing QUAMU as a Bielefeld Focus Area, joint with Frank Riedel & Maren Schmeck (50.000€/year, 3 years) **2025**
- Best Teaching Price (Tutorial Microeconomics 2, graduate) **summer 2025**
- French professorial qualification (qualification MCF) in economics (section 5) and mathematics (section 25) **2025**
- Best Teaching Price (Tutorial Microeconomics 1, graduate) **winter 2024/2025**
- Best Dissertation Prize of Bielefeld University (1.000€) **2024**
- DAAD doctoral scholarship (1.800€/month, travel expenses, health insurance, 4 months) **2022**
- BGTS mobility grant (3.000€) **2022**

## teaching

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### Bielefeld University

- coordinator of the QUAMU Research Seminar **winter 2025**
- teaching assistant for Microeconomics 2 (graduate), coordinator of the QUAMU Research Seminar **summer 2025**
- teaching assistant for Microeconomics 1 (graduate), coordinator of the Economic Theory Lunch Seminar **winter 2024**
- *instructor* for an exercise course on Risk and Insurance (undergraduate) including preparing exercise sheets and oral examinations **summer 2023 & 2024**
- *instructor* for a reading group on “Recent developments in game theory and general equilibrium theory” (graduates, PhD candidates, postdocs) **winter 2022**
- *teaching assistant* in mathematics for economists 2 **winter 2021**
- *teaching assistant* in microeconomics 2 (graduate) **summer 2020**
- *tutor* for game theory (undergraduate) **winter 2019**

## Heidelberg University

- *teaching assistant* in complex analysis 1 (undergraduate)  
including preparing exercise sheets and written examinations **summer 2018**
- *teaching assistant* in complex analysis 2 (undergraduate)  
including preparing exercise sheets and oral examinations **winter 2016**
- *tutor* for real analysis, algebra, complex analysis (undergraduate) **2015–2019**

## talks & meetings

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### past talks & meetings

- *Dependence Uncertainty* **2025**  
Talk at the *II CUDE Retreat* in Bergisch Gladbach, September 24, 2025.
- *Strategic communication of narratives* **2025**  
Talk at the Annual Conference 2025 of the Germany Economic Association (Verein für Socialpolitik) in Cologne, Germany, September 15, 2025.
- *Quantifying and Managing Uncertainty* **2025**  
Pitch introducing the Bielefeld Focus Area Quantifying and Managing Uncertainty (QUAMU) to the administrative staff at Bielefeld University on September 4, 2025.
- *Correlation Uncertainty: a decision-theoretic approach* **2025**  
Talk and poster presentation at the 14th International Symposium on Imprecise Probabilities (ISIPTA) in Bielefeld, July 15, 2025.
- *Strategic communication of narratives* **2025**  
Talk at the XXIV SAET Conference on Ischia, Italy, July 1, 2025.
- *Strategic communication of narratives* **2025**  
Talk at the 14th Lisbon Meetings in Game Theory and Applications, Lisbon, Portugal, June 20, 2025.
- *Correlation Uncertainty: a decision-theoretic approach* **2025**  
Talk at the Workshop on “Unforeseen Contingencies: Representations and Applications” in Grenoble, France, June 5, 2025.
- *Strategic communication of narratives* **2025**  
Talk at the Seminar of Economics and Management (SEAM) at Paderborn University, Germany, May 18, 2025.
- *Strategic communication of narratives* **2025**  
Talk at the Groupe d’Analyse et de Théorie Economique (GATE) at Saint-Étienne University, France, May 13, 2025.
- Guest of the *Standing Committee for Economic Theory* of the Germany Economic Association (Verein für Socialpolitik), May 9-10 in Berlin, Germany. **2025**
- *Correlation Uncertainty* **2025**  
Talk at the 2nd Workshop on Learning Under Weakly Structured Information in Tübingen, Germany, April 8, 2025.
- *Strategic communication of narratives* **2025**  
Talk at the ADRES conference in Strasbourg, France, January 30, 2025.
- *Strategic communication of narratives* **2024**  
Talk at the LEMMA séminaire in Paris Panthéon-Assas, France, October 8, 2024.
- *An academic stay abroad* **2024**  
Introduction to planning a stay abroad during the PhD at the *I CUDE Retreat* in Willingen, October 1, 2024.
- *The Texas Shoot-Out under Knightian Uncertainty* **2024**  
Talk at the Conference on Mechanism and Institution Design in Budapest, Hungary, July 12, 2024.

- *The Texas Shoot-Out under Knightian Uncertainty* **2024**  
Talk at the ESEM 2024 in Rotterdam, Netherlands, August, 2024.
- *Effects of noise on the grammar of languages* **2024**  
Talk at the 2nd Paris Workshop on Games, Decisions, and Language in Paris, France, on June 13, 2024.
- *Ambiguity aversion and the direction of dynamic inconsistency in sender-receiver games of common interest* **2023**  
Talk at the SAET 2023 in Paris, France, on July 17, 2023).
- *The Texas Shoot-Out under Knightian Uncertainty* **2023**  
Talk at the Summer School on Risk and Uncertainty in Economics, Insurance and Finance 2023 in Bielefeld, Germany, on July 7, 2023.
- *The Texas Shoot-Out under Knightian Uncertainty* **2023**  
Talk at the RUFE 2023 conference in Johannesburg, South Africa, on April 4, 2023.
- *The Texas Shoot-Out under Knightian Uncertainty* **2022**  
Talk at the Stony Brook International Conference on Game Theory in Stony Brook, Long Island, on July 21, 2022.
- *The Texas Shoot-Out under Knightian Uncertainty* **2022**  
Online talk at the SAET 2022 at the ANU, Australia, on July 21, 2022.
- *The Texas Shoot Out under Knightian Uncertainty* **2022**  
Talk at the economics seminar at the Eller College of Management at the University of Arizona, Tuscon on March 23, 2022.
- *What did you say? Introducing a Metric-Dependent Stochastic Noise to Voronoi Languages* **2022**  
IBE/Brown bag seminar at the Eller College of Management at the University of Arizona, Tuscon on February 10, 2022.
- *Effects of noise on the grammar of Voronoi languages* **2021**  
Online talk the advanced seminar on general linguistics at the University of Tübingen, Germany, on May 4, 2021.

## self-organized

- *ZiF Focus Group Workshop* **2026**  
Successful grant application for an international ZiF Focus Group for the QUAMU Focus Area with scientific talks, panel discussions, and team-building sessions from March 2-15, 2026 in Bielefeld, Germany. Budget: 24.000€.
- *15th BiGSEM Doctoral Workshop in Economics, Finance and Management* **2020**  
Self-organized doctoral workshop at the Center for Interdisciplinary Research (ZiF) in Bielefeld, Germany on December 14-15 2020. Budget: 4.000€.

## technical skills

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sagemath, maple, mathematica, L<sup>A</sup>T<sub>E</sub>X, python, html, haskell, C++, desktop management with ivanti landesk (citrix), Roxen 17 (CMS)

## languages

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German (native), English (business competence), Swedish (fluent), French (upper intermediate, B2), Chinese (intermediate, HSK 4)

## extracurricular activities

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### Academics

- Elected representative of the academic mid-level at the Faculty of Economics and Business Administration at Bielefeld University **2024–actual**




- Mid-level Faculty representative of the Bielefeld Graduate School of Economics and Management  
**2024-actual**
- Doctoral Representative of the Bielefeld Graduate School of Economics and Management from May 2021 to October 2023  
**2021–2023**

### Other

- Member of the Weisser Ring e.V., German non-profit organization for supporting victims of crime and preventing crime  
**2025-actual**
- Member of the German-Swedish Society, Heidelberg e.V.  
**2019-actual**

### hobbies

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-  hiking, table tennis, apnea diving, climbing, wave surfing
-  learning new languages
-  admirer of the poems by Wallace Stevens

### references

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For reference you may contact:

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1130 East Helen Street  
Tucson, Arizona 85721-0108  
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