Patrick Charbonneau – CV ai fini della pubblicazione

General Information

- Full Name: Patrick Charbonneau
- Spoken Languages: French and English

Academic Course

Professor of Physics *2025–present*
Duke University, Durham, North Carolina

Professor of Chemistry and Physics *2020–2025*
Duke University, Durham, North Carolina

Associate Professor of Chemistry and Physics *2015–20*
Duke University, Durham, North Carolina

Assistant Professor of Chemistry and Physics *2009–15*
Duke University, Durham, North Carolina

Assistant Professor of Chemistry *2008–09*
Duke University, Durham, North Carolina

Postdoctoral Research Scientist *2006–08*
FOM Institute for Atomic and Molecular Physics (Amolf), Amsterdam, The Netherlands
- Project Supervisor: Prof. dr. Daan Frenkel
- Project: *Simulation and test of the ideal glass model*

Ph.D. in Chemical Physics *2001-2006*
Harvard University, Cambridge, Massachusetts
- Advisor: Prof. David R. Reichman
- Thesis: *Theory and simulation of equilibrium and out-of-equilibrium behavior in glasses and gels*

B.Sc. Honours in Chemistry *1998–2001*
Minor in Computer Science
McGill University, Montréal, Québec

Distinctions

APS Outstanding Referee of Physical Review Journals, 2025.

Visiting Professor of Physics at La Sapienza – Università di Roma, 2023–24.

APS Fellow, 2021.

Journal of Chemical Physics Top Reviewer, 2016 and 2018.

Alfred P. Sloan Research Fellow, 2013–2015.

Invited Researcher at IPhT, CEA-Saclay, Winter-Spring 2015.

CNRS Invited Researcher at Université Montpellier 2, Fall 2014.

Invited Researcher in Physics at La Sapienza – Università di Roma, May 2014.

Invited Professor of Physics at ENS-Paris, December 2013.

Visitor at ENS-Paris Meyer Institute, June 2013.

Journal of Chemical Physics Top 20 Reviewers, 2012.

Mention for Teaching Excellence, Duke University, Spring 2012.

ACS HP Outstanding Junior Faculty Award, 2012.

NSF Faculty Early Career Development (CAREER) Award, 2011.

CNRS Invited Researcher at Université Paris VI, Summer 2011.

ORNL Ralph E. Powe Junior Faculty Enhancement Award, 2009.

EU Marie-Curie Incoming International Fellowship, 2006–08.

FQRNT Master's and Ph.D. Fellowships, 2001–06.

Certificate of Distinction in Teaching, 2003.

Society of Chemical Industry Merit Award, 2001.

Duke Teaching

- Chem 544/543: Statistical Mechanics (2008–present).
- Chem 130L: Science of Cooking (2013, 2016, 2020 ×2, 2021, 2023–present).
- Chem 110: Honors General Chemistry (2024)
- HC 59S: How to Save a Life: An Introduction to Emergency Medicine, faculty sponsor (2024–25)
- Hist/Phil 576: Historical and Philosophical Perspectives on Science, discussant (2023)
- Chem/Hist 89S: History of Chemistry (2022)
- Chem 295: Introduction to Research in Chemistry (2014, 2016, 2022–23).
- Chem 495: Graduation with Distinction in Chemistry (2022–23).
- Chem/Math/ECE 990: Data, Algorithms, and Statistical Mechanics (2016).
- Chem 311: Physical Chemistry: Thermodynamics, Statistical Mechanics, and Kinetics (2010–12).

Student and Postdoctoral Scholar Supervision

Undergraduate and Masters Students

Clemence Lee (Duke '12): Fall 2011.
Timothy Barnum (Drew U. '13): REU Summer 2012 (MIT PhD 2020; Assistant Professor Union College).
Giulia Carra (ENS-Paris '13): MS intern Spring 2013 (Paris-Sud PhD 2017)
Samuel Wentworth (U Conn '15): REU Summer 2013.
David Sandberg (U Buffalo '15): REU Summer 2014.
Hao Zhao (Duke '17): 2014–15.
Daming Li (Duke '15): 2015 (Yale PhD 2022).
Cathy Li (Duke '16): 2016–2017 (U Penn PhD 2022).
Caitlin M. Gish (U South Florida '20): REU Summer 2019 (Yale MS 2023).
Ye Liang: Duke MS '19 (Tsinghua PhD 2024)
Zhen Yang (Nanjing '21): 2019 Fall Term (U Michigan PhD candidate)
Anna Brown (Duke '26): Fall 2024

PhD Thesis Students

Kai Zhang: 2008–2012 (current: Assistant Professor at UT Tyler).
Diana Fusco: 2011–2014 (current: Lecturer at Cambridge University).
Yuan Zhuang: 2012–2016 (current: Software engineer Microsoft Inc.).
Lin Fu: 2012–2017 (current: Duoyi Inc.).
Irem Altam: 2015–2020 (current: Postdoctoral scholar at Yale University).
Yi Hu: 2016–2021 (current: Software engineer at Google).
Mingyuan Zheng: 2018–2023 (current: Postdoctoral scholar at HKUST Guanzhou).

Postdoctoral scholars

Pablo Palafox-Hernandez: 2011–2012 (current: Associate Professor at The College of St. Scholastica).
Yuliang Jin: 2012–2014 (current: Professor at ITP-CAS).
Sho Yaida: 2014–2018 (current: Research Scientist at OpenAI).
Joyjit Kundu: 2017–2019 (current: High Performance Future Computing System at imec).
Bijoy Daga: 2019–2022 (current: Postdoctoral scholar at Institute of Mathematical Sciences, India).
Peter K. Morse: 2019–2022 (current: Assistant Professor at Seton Hall University).
Giampaolo Folena: 2022–2023 (current: Postdoctoral scholar at La Sapienza).

Research Funding

Stability Analysis of Spherical Packing Disturbed By Plant Root Growth
Provost Fund for Duke-DKU Collaborations
01/20/2025-06/30/2026
$18,500 (with Kai Huang)

Simons Collaborations in Mathematics and the Physical Sciences: Cracking the Glass Problem
Simons Foundation
05/01/2020-04/30/2023
$ 6,000,000 ($330,000 to Charbonneau + shared resources)
05/01/2016-04/30/2020
$10,000,000 ($500,000 to Charbonneau + shared resources)

Soft Matter Simulation and Theory of the Crystal Assembly of Globular and Membrane Proteins
National Science Foundation, DMR-CMMT
04/15/2018-03/31/2022
$270,000

Continuous Acoustic Assembly of Metallic Nanoparticles in Microfluidic Systems
National Science Foundation, CMMI-NM
06/30/2014-12/31/2018
$540,000 ($150,000 to Charbonneau)

Triangle Center for Excellence for Materials Research and Innovation: Programmable Assembly of Soft Matter
National Science Foundation, DMR-MRSEC
09/15/2011-08/31/2017
$13,680,000 ($\sim$ $300,000 to Charbonneau)

Extreme Science and Engineering Discovery Environment (XSEDE)
– Understanding Protein Crystallization and Dynamics (01/01/2017-12/31/2017)
$34,910 (estimated monetary value)
– Free-Energy Determination of the Phase Behavior of Microphase-Forming Models (01/01/2016-12/31/2016)
$57,600 (estimated monetary value)

CAREER: Soft Matter Self-Assembly: Protein Crystallization and Colloidal Microphase Formation
National Science Foundation, DMR-CMMT
06/01/2011-12/31/2017
$450,000

Alfred P. Sloan Foundation
09/15/2013-09/14/2015
$50,000

Ralph E. Powe Junior Faculty Enhancement Awards: Rod Microphase Self-Assembly
Oak Ridge Associated Universities
06/01/2009-05/31/2010
$10,000

Departmental and University Service (selection)

Duke Graduate School Few–Glasson Prize Selection Committee, 2022–.

Research Data Initiative Data Policy Advisory Group, 2021–.

Duke Digital Repository Faculty Advisor, 2016–.

Standing Committee for Misconduct in Research, July 2019–August 2028.

Director of Graduate Studies, University Program in Materials Science & Engineering, 2024–27.

Academic Council, May 2011–May 2013 & May 2020–May 2023 & May 2024–May 2027

Duke Graduate School Few–Glasson Prize Selection Committee, 2022–2024.

University Priorities Committee, August 2022–June 2023.

Faculty in Residence, August 2011–June 2014 & August 2017–May 2023.

Pre-major Advisor, 2011-2014 & 2017–23

Library Council, September 2017–August 2023 (chair 2020–23).

University Librarian Search Committee, 2021-2022 (chair).

Library 2030 Faculty Steering Group, 2021 (chair).

Authorship Dispute Board, July 2019–June 2022.

Marshall Scholarship Mock Interview, November 2021.

Executive Council of the Graduate Faculty, July 2019–June 2021.

AB Duke Scholars Selection Committee, 2020.

OUSF Finalists Faculty Dinners, 2013, 2014 & 2019.

Associate Chair of the Chemistry Department, July 2017–June 2019.

Diversity, Equity, and Inclusion Chemistry Committee, 2017–18.

Academic Programs Committee, September 2015–May 2018.

Information Technology Advisory Council, September 2015–August 2018.

Other Service

Soft Matter Association of the Americas, contributor, 2022–

Women in the History of Quantum Physics working group, Associate Chair, 2022–

APS GSNP Member at Large, 2024–27

APS GSNP Dissertation Prize Committee, 2024.

APS Onsager Prize Fundraising Committee, 2024

APS Irwin Oppenheim Award Selection Committee Chair, 2022–23 (chair).

APS March Meeting Task Force, Governance and Logistics Subcommittee Chair, June 2020–November 2021.

Research activities

The Charbonneau Group pursues frontier research in soft matter using simulation and theory. We tackle questions ranging from the molecular to the colloidal scale, such as the glass problem, protein crystallization, and nano- and microscale particle assembly. Because making sense of science sometimes requires a completely different perspective, we also explore various questions in the history of chemistry and physics.

- Glass problem: Explaining how a liquid turns into solid glass is one of the most challenging problems in the theory of matter. By changing the dimension of space in simulations, my group first showed that the liquid structure is important in preventing crystallization, but that simple geometrical frustration does not cause the dynamical slowdown. Through numerical simulations, we have shown that the amorphous order is intimately related to the rarefaction of metastable states in the landscape, and is universally responsible for rapid dynamical slowdown observed in glass-forming liquids. Through mean-field theory, we have discovered a critical transition upon cooling/compressing glasses. Through simulations and renormalization group studies, we have further revealed that this phenomenon persists even in the presence of violent fluctuations. We are currently trying to understand the remarkable universality and dimensional robustness of the jamming transition in deeply quenched glasses, and the various relaxation processes involved in glass formation of both passive and active systems.
- Microphase formation: The self-assembly of nanoscale components is one of the most promising routes for designing ever smaller and more complex devices, such as organic photovoltaics and memory circuits. Microphase formers exhibit an exotic array of structures on the nanoscale, and these systems' relative simplicity makes them plausible experimental targets. Yet standard thermodynamic and kinetic descriptions provide insufficient guidance. Our simulation methodology for correctly treating lattices with fluctuating site occupancy has allowed us to obtain the equilibrium phase behavior of arbitrary microphase formers. Even the most basic of these models exhibit a surprisingly rich and novel behavior, such as softening due to clustering, reentrant transitions, and the formation of structure as varied as cluster crystals and double gyroid assemblies. We are now developing simulation schemes for the disordered microphase regime based on insight from mean-field theory and machine learning
- Protein crystallization: Describing biological processes and drug design rely heavily on crystallographically-determined protein structures. Obtaining protein crystals, however, remains largely a trial-and-error endeavor. To understand the complex self-assembly of proteins, we have developed a hybrid approach that marries soft matter and structural biology. The resulting rationalization of the crystallization behavior of certain proteins allows us to make verifiable predictions about optimal crystallization conditions, and to constructively revisit physical and biological descriptions of the process. In collaboration with various protein crystallization facilities, we are also developing tools to analyze and interpret the results of crystallization experiments, and thus guide the formulation of appropriate experimental conditions.
- History of replica symmetry breaking in physics: From 1975 to 1995, the statistical physics community underwent a paradigm shift, as replica symmetry breaking (RSB) was first properly formulated, and then gradually developed by the physics and mathematical communities. Recent advances in the physics of glasses, inference, and machine learning, among others, take their root in this major yet somewhat obscure theoretical development. For posterity and future study, we are conducting a series of interviews with the original scientific participants and deposit them at the Centre d'Archives de Philosophie, d'Histoire et d'Édition des Sciences (CAPHÉS) of École normale supérieure de Paris (ENS). The interviews are also assembled on a dedicated site. Interestingly, two recent Nobel prize winners fall within the scope of this project: Giorgio Parisi (Physics, 2021) and John Hopfield (Physics, 2024).
- Women in the history of quantum physics: Capturing the lives and scientific discoveries of 16 women from diverse backgrounds, Women in the History of Quantum Physics (due out in 2025 at Cambridge University Press) reveals the remarkable contributions women have made to one of the most intriguing and beautiful scientific fields of our era. Rigorously researched, and presented in accessible language, our anthology transforms traditional physics historiography.

Previously, even when traditional physics historiography as well as women's and gender studies, sought to recover stories of women in STEM and quantum research, they inadvertently reinforced quantum physics' masculine image. This hindered the inclusion of women in the field. WiHQP pays long overdue attention to women who helped develop quantum physics. The anthology serves as a valuable new counterweight, demonstrating that in the history of quantum physics, women of all backgrounds have been essential contributors all along.

- History of confections: Controlling sugar crystallization is key to producing both grained and ungrained confections. Their making and knowing, however, was mastered well before the underlying physical chemistry of supersaturation and nucleation were formalized. Using contemporary materials science insights allow us to reconstruct the surprising history of these humble candies.

Publications

Note that different subfield-dependent author ordering conventions are followed.

- Papers (international): 113
- Papers (national): 2
- Book chapters: 7
- Books (scientific): 2
- Books (teaching) : 0

- Total Citations: 6736
- Average Citations per Product: 52
- Hirsch (H) index: 45
- Normalized H index: 45/24 = 1.9

Journal Articles

115. P. Charbonneau, G. Folena, E. Malatesta, T. Rizzo, and F. Zamponi, Rare Trajectories in a Prototypical Mean-field Disordered Model: Insights into Landscape and Instantons, **submitted**, arXiv:2505.00107 (2025).
114. P. Charbonneau, Elizabeth Monroe in Cambridge: Early Computational Quantum Chemistry, *Physik Journal*, **submitted** (2024).
113. P. Charbonneau, G. Folena, R. Díaz Hernández Rojas, P. K. Morse, and F. Ricci-Tersenghi, Jamming the Random Lorentz Gas: Configurational Entropy, Crunching Geometry, and Critical Universality, **submitted**, arXiv:2410.05784 (2024).
112. M. Zheng, D. Khomenko, and P. Charbonneau, Not-so-glass-like Caging and Fluctuations of an Active Matter Model, *Physical Review Letters* **134**, 228301 (2025).
111. C. C. L. Laudicina, P. Charbonneau, Y. Hu, L. M. C. Janssen, P. K. Morse, I. Pihlajamaa, and G. Szamel, Simple fluctuations in simple glass formers, *Journal of Physical Chemistry B* **128**, 12237–12249 (2024).
110. C. P. Royall, P. Charbonneau, M. Dijkstra, J. Russo, F. Smallenburg, T. Speck, and C. Valeriani, Colloidal Hard Spheres: Triumphs, Challenges and Mysteries, *Reviews of Modern Physics* **96**, 045003 (2024).
109. P. Charbonneau, Sucre à la crème: Origin and Trajectory of an Authentic Québec Confection, *Ethnologies* **46**(1), 175–198 (2024).
108. S. Wopat, P. Adhyapok, B. Daga, J. M. Crawford, J. Norman, J. Bagwell, B. Peskin, I. Magre, S. M. Fogerson, D. S. Levic, S. Di Talia, D. P. Kiehart, P. Charbonneau, and M. Bagnat, Notochord segmentation in zebrafish controlled by iterative mechanical signaling, *Developmental Cell* **59**, p1860-1875.e5 (2024).
107. V. Bouchard, P. Charbonneau, J. de Valicourt, Pralines des Voyageurs: an iconic intercultural food, *Cuizine* **11**(1), `https://doi.org/10.7202/1112245ar` (2024).
106. P. Charbonneau, P. M. Morse, and Y. Hu, Dynamics and fluctuations of minimally-structured glass formers, *Physical Review E* **109**, 054905 (2024).

105. G. Bonnet, P. Charbonneau and G. Folena, Glass-like Caging with Random Planes, *Physical Review E* **109**, 024125 (2024).
104. P. Charbonneau and P. K. Morse, Jamming, relaxation, and memory in a minimally structured glass former, *Physical Review E* **108**, 054102 (2023).
103. P. Charbonneau, K. Kilgore, and J. M. Pilcher, Recreating Colonial Mexican Fudge: Panochita in the Culinaria Kitchen Laboratory, *Gastronomica* **23**(1), 112–115 (2023).
102. P. Charbonneau and J. M. Pilcher, From Panocha to Fudge: Mexican Roots of an American Candy, *Gastronomica* **23**(1), 100–111 (2023).
101. M. Zheng, M. Tarzia and P. Charbonneau, Weakening the critical dynamical slowing down of models with SALR interactions, *Journal of Chemical Physics* **157**, 181103 (2022).
100. L. Kool, P. Charbonneau, and K. E. Daniels, Gardner-like transition from transient to persistent force contacts in granular crystals, *Physical Review E* **106**, 054901 (2022).
99. P. Charbonneau, From the replica trick to replica symmetry breaking, *IAMP News Bulletin* **October 2022**, 5-25 (2022).
98. G. Folena, G. Biroli, P. Charbonneau, Y. Hu, F. Zamponi, Equilibrium Fluctuations in Mean-field Disordered Models, *Physical Review E* **106**, 024605 (2022).
97. G. Biroli, P. Charbonneau, G. Folena, Y. Hu, F. Zamponi, Local dynamical heterogeneity in glass formers, *Physical Review Letters* **128**, 175501 (2022).
96. P. Charbonneau, Y. Hu, J. Kundu, and P. K. Morse, The dimensional evolution of structure and dynamics in hard sphere liquids, *Journal of Chemical Physics* **156**, 134502 (2022).
95. P. Charbonneau, P. K. Morse, W. Perkins, and F. Zamponi, Three simple scenarios for high-dimensional sphere packings, *Physical Review E* **104**, 064612 (2021).
94. Y. Hu and P. Charbonneau, Numerical transfer matrix study of frustrated next-nearest-neighbor Ising models on square lattices, *Physical Review B* **104**, 144429 (2021).
93. P. Charbonneau, C. M. Gish, R. S. Hoy, P. K. Morse, Thermodynamic stability of hard sphere crystals in dimensions 3 through 10, *European Physical Journal E* **44**, 101 (2021).
92. B. Charbonneau, P. Charbonneau, Y. Hu, and Z. Yang, High-dimensional percolation criticality and hints of mean-field-like caging of the random Lorentz gas, *Physical Review E* **104**, 024137 (2021).
91. Y. Hu, P. Charbonneau, Comment on "Kosterlitz-Thouless-type caging-uncaging transition in a quasi-one-dimensional hard disk system", *Physical Review Research* **3**, 038001 (2021).
90. P. Charbonneau, M. Tarzia, Solution of Disordered Microphases in the Bethe approximation, *Journal of Chemical Physics* **155**, 024501 (2021).
89. M. Zheng, P. Charbonneau, Characterization and Efficient Monte Carlo Sampling of Disordered Microphases, *Journal of Chemical Physics* **154**, 244506 (2021).
88. P. Charbonneau, E. I. Corwin, C. Dennis, R. Díaz Hernández Rojas, H. Ikeda, G. Parisi, F. Ricci-Tersenghi, Finite size effects in the microscopic critical properties of jammed configurations: a comprehensive study of the effects of different types of disorder, *Physical Review E* **104**, 014102 (2021).
87. G. Biroli, P. Charbonneau, Y. Hu, H. Ikeda, G. Szamel, F. Zamponi, Mean-field caging in a random Lorentz gas, *Journal of Physical Chemistry B* **125**, 6244–6254 (2021).
86. Y. Hu, P. Charbonneau, Percolation thresholds on high dimensional D_n and E_8 related lattices, *Physical Review E* **103**, 062115 (2021).
85. P. Charbonneau, P. K. Morse, Memory formation in jammed hard spheres, *Physical Review Letters* **126**, 088001 (2021).
84. M. Downey, S. Lafferty-Hess, P. Charbonneau, A. Zoss, Engaging Researchers in Data Dialogues: Designing Collaborative Programming to Promote Research Data Sharing, *Journal of eScience Librarianship* **10**, e1193 (2021).

83. G. Biroli, P. Charbonneau, E. I. Corwin, Y. Hu, H. Ikeda, G. Szamel, F. Zamponi, Interplay between percolation and glassiness in the random Lorentz gas, *Physical Review E* **103**, 030104 (2021).

82. L. Berthier, P. Charbonneau, J. Kundu, Finite-dimensional vestige of spinodal criticality above the dynamical glass transition, *Physical Review Letters* **125**, 108001 (2020).

81. J. Kundu, P. Charbonneau, Postponing the dynamical transition density using competing interactions, *Granular Matter* **22**, 55 (2020)

80. I. Altan, A. R. Khan, S. James, M. K. Quinn, J. McManus, P. Charbonneau, Using schematic models to understand the microscopic basis for inverted solubility in γD-crystallin, *Journal of Physical Chemistry B* **123**, 10061–10072 (2019).

79. E. Flenner, L. Berthier, P. Charbonneau, C. Fullerton, Front-mediated melting of ultrastable glasses, *Physical Review Letters* **123**, 175501, (2019).

78. A. R. Khan, S. James, M. K. Quinn, I. Altan, P. Charbonneau, J. J. McManus, Temperature-dependent non-covalent protein-protein interactions explain normal and inverted solubility in a mutant of human gamma D-crystallin, *Biophysical Journal* **117**, 930-937 (2019).

77. L. Berthier, G. Biroli, P. Charbonneau, E. I. Corwin, S. Franz, F. Zamponi, Gardner Physics in Amorphous Solids and Beyond, *Journal of Chemical Physics*, **151**, 010901 (2019).

76. G. Biroli, P. Charbonneau, Y. Hu, Dynamics around the Site Percolation Threshold on High-Dimensional Hypercubic Lattices, *Physical Review E* **99**, 022118 (2019).

75. L. Berthier, P. Charbonneau, J. Kundu, Bypassing sluggishness: SWAP algorithm and glassiness in high dimensions, *Physical Review E* **99**, 031301(R) (2019).

74. P. Charbonneau, Y. Hu, A. Raju, J. P. Sethna, S. Yaida, Morphology of renormalization-group flow for the de Almeida-Thouless-Gardner universality class, *Physical Review E* **99**, 022132 (2019).

73. L. Berthier, P. Charbonneau, A. Ninarello, M. Osawa, S. Yaida, Zero-temperature glass transition in two dimensions, *Nature Communications* **10**, 1508 (2019).

72. P. Charbonneau, E. I. Corwin, L. Fu, G. Tsekenis, M. van der Naald, Glassy, Gardner-like phenomenology in minimally polydisperse crystalline systems, *Physical Review E* **99**, 020901(R) (2019).

71. J. Norman, E. L. Sorrell, Y. Hu, V. Siripurapu, J. Garcia, J. Bagwell, P. Charbonneau, S. R. Lubkin, M. Bagnat, Tissue self-organization underlies morphogenesis of the notochord, *Philosophical Transactions of the Royal Society B: Biological Sciences* **373** 1759 (2018).

70. A. E. Bruno, P. Charbonneau, J. Newman, E. H. Snell, D. R. So, V. Vanhoucke, C. J. Watkins, S. Williams, J. Wilson, Classification of crystallization outcomes using deep convolutional neural networks, *PLOS ONE* **13**(6), e0198883 (2018).

69. Y. Hu, L. Fu, P. Charbonneau, Correlation lengths in quasi-one-dimensional systems via transfer matrices, *Molecular Physics* **116** 3345-3354 (2018).

68. B. Charbonneau, P. Charbonneau, G. Szamel, A Microscopic Model of the Stokes-Einstein Relation in Arbitrary Dimension, *Journal of Chemical Physics* **148**, 224503 (2018).

67. C. Reyes, L. Fu, P. P. A. Suthanthiraraj, C. E. Owens, C. W. Shields IV, G. P. López, P. Charbonneau, B. J. Wiley, The Limits of Primary Radiation Forces in Bulk Acoustic Standing Waves for Concentrating Nanoparticles, *Particle & Particle System Characterization* **35**, 1700470 (2018).

66. Y. Hu, P. Charbonneau, Clustering and assembly dynamics of a one-dimensional microphase former, *Soft Matter* **14**, 4101 (2018).

65. I. Altan, D. Fusco, P. Afonine, P. Charbonneau, Learning about Biomolecular Solvation from Water in Protein Crystals, *Journal of Physical Chemistry B* **122**, 2475-2486 (2018).

64. L. Berthier, P. Charbonneau, E. Flenner, F. Zamponi, How to create equilibrium vapor-deposited glasses, *Physical Review Letters* **119**, 188002 (2017).

63. L. Berthier, P. Charbonneau, D. Coslovich, A. Ninarello, M. Ozawa, S. Yaida, Breaking the glass ceiling: convergent measurements of the configurational entropy in extremely supercooled liquids, *Proceedings of the National Academy of Sciences* **119**, 11356-11361 (2017).
62. Y. Zhuang, P. Charbonneau, Communication: Microphase Equilibrium and Assembly Dynamics, *Journal of Chemical Physics* **147**, 091102 (2017).
61. P. Charbonneau, Y. Li, H. D. Pfister, S. Yaida, Lyapunov exponent and susceptibility, *Physical Review E* **96**, 032129 (2017).
60. P. Charbonneau, S. Yaida, A nontrivial critical fixed point for replica-symmetry-breaking transitions, *Physical Review Letters* **118**, 215701 (2017).
59. A. T. Pham, Y. Zhuang, J. E. S. Socolar, P. Charbonneau, B. B. Yellen, Rotating magnetic fields control colloidal self-assembly and phase transitions, *Physical Review E* **95**, 052607 (2017).
58. L. Fu, C Bian, D. F. Cruz, C. W. Shields IV, G. P. López, P. Charbonneau, Assembly of hard spheres in a cylinder: a computational and experimental study, *Soft Matter* **13**, 3296–3306 (2017).
57. P. Charbonneau, J. Kurchan, G. Parisi, P. Urbani, F. Zamponi, Glass and Jamming Transitions: From Exact Results to Finite-Dimensional Descriptions, *Annual Review of Condensed Matter Physics* **8**, 265–288 (2017).
56. S. Yaida, L. Berthier, P. Charbonneau, G. Tarjus, Point-to-set lengths, local structure, and glassiness, *Physical Review E* **94**, 032605 (2016).
55. Y. Zhuang and P. Charbonneau, Recent Advances in the Theory and Simulation of Model Colloidal Microphase Formers, *Journal of Physical Chemistry B* **120**, 7775-7782 (2016).
54. L. Berthier, P. Charbonneau, Y. Jin, G. Parisi, B. Seoane, F. Zamponi, Growing timescales and lengthscales characterizing vibrations of amorphous solids, *Proceedings of the National Academy of Sciences* **113**, 8397–8401 (2016).
53. P. Charbonneau, E. I. Corwin, G. Parisi, A. Poncet, F. Zamponi, Universal non-Debye scaling in the density of states of amorphous solids, *Physical Review Letters* **117**, 045503 (2016).
52. Y. Zhuang and P. Charbonneau, Equilibrium Phase Behavior of the Square-Well Linear Microphase-Forming Model, *Journal of Physical Chemistry B* **120**, 6178–6188 (2016).
51. I. Altan, P. Charbonneau, E. H. Snell, Computational Crystallization, *Archives of Biochemistry and Biophysics* **602**, 12–20 (2016).
50. P. Charbonneau, E. Dyer, J. Lee, S. Yaida, Order-agnostic link between statics and dynamics in glass-forming liquids, *Journal of Statistical Mechanics: Theory and Experiments*, **2016**, 074004 (2016).
49. J. J. McManus, P. Charbonneau, E. Zaccarelli, N. Asherie, The Physics of Protein Self-Assembly, *Current Opinion in Colloid & Interface Science* **22**, 73 (2016).
48. R. Tavarone, P. Charbonneau, H. Stark, Kinetic Monte Carlo Simulations for Birefringence Relaxation of Photo-Switchable Molecules on a Surface, *Journal of Chemical Physics* **144**, 104703 (2016).
47. L. Fu, W. Steinhardt, H. Zhao, J. E. S. Socolar, P. Charbonneau, Hard sphere packings within cylinders, *Soft Matter* **12**, 2505-2514 (2016).
46. Y. Zhuang, K. Zhang, P. Charbonneau, Equilibrium Phase Behavior of a Continuous-Space Microphase Former, *Physical Review Letters* **116**, 098301 (2016).
45. L. Berthier, P. Charbonneau, S. Yaida, Efficient measurement of point-to-set correlations and overlap fluctuations in glass-forming liquids, *Journal of Chemical Physics* **144**, 024501 (2016).
44. C. E. Owens, C. W. Shields IV, D. F. Cruz, P. Charbonneau, G. P. Lopez, Highly Parallel Acoustic Assembly of Microparticles into Well-Ordered Colloidal Crystallites, *Soft Matter* **12**, 717 (2016).
43. D. Fusco, P. Charbonneau, Soft Matter Perspective on Protein Crystal Assembly, *Colloids and Surfaces B: Biointerfaces* **137**, 22 (2016).

42. R. Tavarone, P. Charbonneau, H. Stark, Phase ordering of zig-zag and bow-shaped hard needles in two dimensions, *Journal of Chemical Physics* **143**, 114505 (2015).

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11. P. Charbonneau, History of RSB Interview: Miguel Virasoro, transcript of an oral history conducted 2021 by Patrick Charbonneau and Francesco Zamponi, History of RSB Project, CAPHÉS, École normale supérieure, Paris, 2021, 7 p. https://doi.org/10.34847/nkl.a941vym8
10. P. Charbonneau, History of RSB Interview: Scott Kirkpatrick, transcript of an oral history conducted 2021 by Patrick Charbonneau and Francesco Zamponi, History of RSB Project, CAPHÉS, École normale supérieure, Paris, 2021, 24 p. https://doi.org/10.34847/nkl.cba615t7
9. P. Charbonneau, History of RSB Interview: John Mydosh, transcript of an oral history conducted 2021 by Patrick Charbonneau, History of RSB Project, CAPHÉS, École normale supérieure, Paris, 2021, 19 p. https://doi.org/10.34847/nkl.e1e3ob87
8. P. Charbonneau, History of RSB Interview: A. Peter Young, transcript of an oral history conducted 2021 by Patrick Charbonneau and Francesco Zamponi, History of RSB Project, CAPHÉS, École normale supérieure, Paris, 2021, 20 p. https://doi.org/10.34847/nkl.2fef8760
7. P. Charbonneau, History of RSB Interview: Hanoch Gutfreund, transcript of an oral history conducted 2020 by Patrick Charbonneau and Francesco Zamponi, History of RSB Project, CAPHÉS, École normale supérieure, Paris, 2021, 16 p. https://doi.org/10.34847/nkl.1adb9r42
6. P. Charbonneau, History of RSB Interview: Michael Moore, transcript of an oral history conducted 2020 by Patrick Charbonneau and Francesco Zamponi, History of RSB Project,

CAPHÉS, École normale supérieure, Paris, 2021, 26 p. https://doi.org/10.34847/nkl.997eiv27

5. P. Charbonneau, History of RSB Interview: Kurt Binder, transcript of an oral history conducted 2020 by Patrick Charbonneau and Francesco Zamponi, History of RSB Project, CAPHÉS, École normale supérieure, Paris, 2021, 20 p. https://doi.org/10.34847/nkl.5f2b685y
4. P. Charbonneau, History of RSB Interview: David Sherrington, transcript of an oral history conducted 2020 by Patrick Charbonneau and Francesco Zamponi, History of RSB Project, CAPHÉS, École normale supérieure, Paris, 2021, 39 p. https://doi.org/10.34847/nkl.072dc5a6
3. P. Charbonneau, History of RSB Interview: Édouard Brézin, transcript of an oral history conducted 2020 by Patrick Charbonneau and Francesco Zamponi, History of RSB Project, CAPHÉS, École normale supérieure, Paris, 2021, 20 p. https://doi.org/10.34847/nkl.9573z1yg
2. P. Charbonneau, History of RSB Interview: Bernard Derrida, transcript of an oral history conducted 2020 by Patrick Charbonneau and Francesco Zamponi, History of RSB Project, CAPHÉS, École normale supérieure, Paris, 2021, 23 p. https://doi.org/10.34847/nkl.3e183b0o
1. P Charbonneau, History of RSB Interview: John J. Hopfield, transcript of an oral history conducted 2020 by Patrick Charbonneau and Francesco Zamponi, History of RSB Project, CAPHÉS, École normale supérieure, Paris, 2020, 21 p. https://doi.org/11280/5fd45598

Popular Science, Exhibits, and Public Lectures

45. "La dent sucrée des Québécois," Steak, blé d'Inde, patates, 2e série, Historia TV (2025).
44. "Le sucre à la crème, candidat pour le patrimoine universel ?" Francis Reddy, Le 15-18, Radio-Canada, December 20, 2024.
43. "Le sucre à la crème, l'une des seules recettes purement québécoises?" Alexis Boulianne, Caribou Magazine, November 25, 2024.
42. "The Scientific Vision of Women," Duke University Libraries Exhibit, Biddle Rare Book Room, contributor, August 2024–February 2025.
41. "Patrick Charbonneau, Jeffrey Pilcher, and Kelsey Kilgore on the Mexican Roots of an American Candy," Jaclyn Rohel, Gastronomica Podcast, March 26, 2023.
40. "Tracing the History of Sucre à la Crème – An Interview with Patrick Charbonneau," Matthew Thomas, January 28, 2023.
39. "Managing and Sharing Data in the Natural Sciences A Data Management Exemplar Series Interview With Chemist Patrick Charbonneau, Ph.D.," Raoul Doyle, August 29, 2022.
38. "Smooth as Glass," Mary-Russell Roberson, Duke Science and Technology, June 2022.
37. "Même en pandémie, on ne valorise pas les scientifiques," Sophie Durocher, QUB Radio, October 14, 2021.
36. "Check This Out: Molecular Gastronomy Through Cooking," Veronique Koch, Duke Communications, March 25, 2021.
35. "Seeing the Invisible: 50 Years of Macromolecular Visualization," David and Jane Richardson, Patrick Charbonneau, Rebecca Williams, Vincent Chen, Michael Daul, Janelle Hutchinson, and Margaret Brown, Duke University Libraries Exhibit, The Jerry and Bruce Chappell Family Gallery, February 7, 2020 – November 24, 2020.
34. "'Seeing the Invisible' exhibit opens in the Chappell Family Gallery," The Chronicle, March 7, 2020.
33. "The Cultural Shift Toward Routinely Depositing and Sharing Research Data," Emilia Chiscop-Head, May 4, 2020.
32. "Why Do You Study That? Glass", Veronique Koch, March 4, 2020. https://today.duke.edu/2020/03/cracking-glass-problem.

31. "The Glass Problem: Changing and Challenging Material Definitions," Katherine Larson and Patrick Charbonneau, *St. Jerome's University Bridges Lecture*, October 25, 2019.
30. "Jamming Aspherical Cows," Patrick Charbonneau, *Journal Club for Condensed Matter Physics*, February 2019.
29. "Teaching a Machine to Spot a Crystal," Kara Manke, *Duke Research Blog*, June 20, 2018.
28. "Cheating Time to Watch Liquids do the Slow Dance," Kara Manke, *Duke Research Blog*, November 2, 2017.
27. "The Time for Disorder Has Come," Patrick Charbonneau, *Journal Club for Condensed Matter Physics*, September 2017.
26. "Glasses and Friendships: a French-American Scientific Collaboration," Patrick Charbonneau, Valérie Trentesaux, *Office for Science & Technology at the Embassy of France in the United States*, June 9, 2017.
25. "Scientists Reignite 30-Year-Old Debate About Glass With New Calculation," Ryan F. Mandelbaum, *Gizmodo*, June 4, 2017.
24. "Breaking Glass in Infinite Dimensions" Kara Manke, *Duke Today*, May 30, 2017.
23. "La théorie du verre de plus en plus solide," Ludovic Berthier, Patrick Charbonneau, Francesco Zamponi, *La Recherche*, **Number 510**, April 2016.
22. "Soft Matter and Cooking", by Département de Physique Colloquium, École Normale Supérieure, January 2015.
21. "Through the Theoretical Glass" by Katie L. Burke, *American Scientist* **103**, January-February, 2015, p. 4,
20. "Scoperto il segreto del vetro: la sua struttura è frattale" by Simone Regina, *Corriere Della Sera*, June 5, 2014.
19. "Non c'è vetro senza frattali" by Folco Claudi, *Le Scienze*, May 27, 2014.
18. "When Things Get Glassy, Molecules Go Fractal" by Erin Weeks, *Duke Research Blog*, April 23, 2014.
17. "How fractals jam glassy materials" by Ashley Yeager, *Science News Science Ticker Blog*, April 24, 2014.
16. "Spherical Cows Help Turn Proteins to Crystals" by Ashley Yeager, *Duke Research Blog*, November 13, 2013.
15. "Through the Theoretical Glass" by Katie L. Burke, *American Scientist Pizza Lunch Podcast*, September 2013 (November 5, 2014).
14. "Scientists Get Best View Yet of the Structure of Glass" by Elizabeth Quill, *Smithsonian Magazine Blog*, July 12, 2013.
13. "The Science of Life – Through a glass, less darkly" by Robert Frederick, *Science News* **183**(2), 4, January 26, 2013.
12. "Bookbag: Chemistry 89S: The Chemistry and Physics of Cooking" by Dan Altman, *Duke Magazine*, 13, Summer 2013.
11. "Final Banquet Closes First Science of Cooking Class" by Ashley Yeager, *Duke Today*, April 24, 2013.
10. "Chemistry in the Kitchen, Cooking in the Classroom" by Ezgi Ustundag, *Duke Today*, April 10, 2013.
9. "Chocolate's crisp crack comes from chemistry" by Ashley Yeager, *Duke Research Blog*, March 28, 2013.
8. "Meat Glue – True to its Name" by Ashley Yeager, *Duke Research Blog*, March 8, 2013.
7. "Diffusion à la Chocolate Lava Cake" by Ashley Yeager, *Duke Research Blog*, February 21, 2013.
6. "Cooking up chemistry with candy" by Ashley Yeager, *Duke Research Blog*, January 23, 2013.
5. "Soft Matter, Or Just Marshmallows?" by Ashley Mooney, *Duke Research Blog*, November 15, 2012.

4. "A second crack at the nature of glass" by Ashley Yeager, *Duke Research Blog*, August 13, 2012.
3. "Shaping and shattering theories of glass" by Ashley Yeager, *Duke Research Blog*, October 25, 2011.
2. "Tangling the microscopic ladder" by Ashley Yeager, *Duke Research Blog*, December 15, 2010.
1. "Patrick Charbonneau: Chemist has all the right ingredients" by Bronwyn Chester, *McGill Reporter*, January 11, 2001.

Selected Seminars and Conferences

Invited oral contributions, unless otherwise noted.

157. *Unifying Concepts in Glass Physics*, Bengaluru, India, December 2025.
156. *University of Washington Chemistry Seminar*, St. Louis, MS, November 2025.
155. *Society for the History of Alchemy and Chemistry*, contributed, Philadelphia, PA, October 2025.
154. *International Congress of History of Science and Technology*, Dunedin, New Zealand, July 2025.
153. *Folklore Studies Association of Canada Annual Meeting*, contributed, Gatineau, QC, June 2025.
152. *Canadian Society for the History and Philosophy of Science Annual Meeting*, Toronto, ON, May 2025.
151. *Consortium for History of Science, Technology and Medicine: Quantum Century*, virtual, April 2025.
150. *Deutsche Physikalische Gemeinschaft–Frühjahrstagung der Sektion Materie und Kosmos*, Göttingen, Germany, March 2025.
149. *APS March Meeting*, Anaheim, CA, March 2025.
148. *127th Statistical Mechanics Conference*, Piscataway, NJ, December 2024.
147. *Women in the History of Quantum Physics: A Portrait Series*, virtual, October 2024.
146. *11th ESHS Conference*, contributed, Barcelona, Spain, September 2024.
145. *Water-X 2024*, La Maddelena, Sardinia, Italy, May 2024.
144. *Leipzig-Pisa ML/Probability Seminar*, Università di Pisa, Italy, March 2024.
143. *Loughborough Applied Math Seminar*, Loughborough University, Loughborough, UK, March 2024.
142. *Chimera Seminar*, Sapienza–Università di Roma, Italy, November, 2023.
141. *29th Solvay Conference on Physics - The structure and dynamics of disordered systems*, conference participant, Brussels, Belgium, October 2023
140. *Summer School on Soft Solids and Complex Fluids 2023*, University of Massachusetts Amherst, MA, June 2023.
139. *Quantum Physics and Complex Systems*, City University of Hong Kong, Hong Kong, December 2022.
138. *Nordita: Current and Future Themes in Soft & Biological Active Matter*, Stockholm, Sweden, July–August 2022.
137. *Lorentz Institute Seminar*, Leiden, Netherlands, July 2022.
136. *Disorder's Role in Glass Formation and Deformation*, Leiden, Netherlands, July 2022.
135. *Women in Quantum Physics History: Hermann and Friends*, Utrecht, Netherlands, July 2022.
134. *Canadian Association of Physicists Annual Meeting*, Hamilton, ON, June 2022.
133. *ACS Spring Meeting*, San Diego, CA, March 2022.
132. *McMaster University Physics Colloquium*, Hamilton, ON, December 2021.
131. *Duke University Physics Colloquium*, Durham, NC, October 2021.
130. *Glassy Systems and Inter-Disciplinary Application*, Cargèse, France (hybrid), July 2021.
129. *Mainz Materials Simulation Days 2021*, virtual, June 2021.

128. *APS March Meeting*, virtual, March 2021.
127. *DKU Soft Matter Symposium: Bridging 'Micro-Meso-Macro' Scales in Particulate and Biological Systems*, Kunshan, China (hybrid), December 2020.
126. *Recent progress in glassy systems: Marginally Stable Phases, Quantum Behaviour, Machine Learning and Mathematical Physics*, Les Houches School of Physics, France, February 2020.
125. *Bristol University Physics Seminar*, Bristol, UK, November 2019.
124. *TU Eindhoven Physics Colloquium*, Eindhoven, Netherlands, November 2019.
123. *Centro Internacional de Ciencias Workshop on Amorphous Solids*, Cuernavaca, Mexico, October 2019.
122. *Mini-symposium on glass and jamming physics*, Beijing, China, July 2019.
121. *Chinese Academy of Sciences – Institute of Physics Seminar*, Beijing, China, July 2019.
120. *Frontiers of soft matter and amorphous materials*, Shanghai, China, July 2019.
119. *4th International Conference on Packing Problems*, New Haven, CT, June 2019.
118. *KITP Seminar*, Santa Barbara, CA, January 2019.
117. *Dynamical equations for dense liquids*, Paris, France, December 2018.
116. *U Mass-Amherst Physics Seminar*, Amherst, MA, November 2018.
115. *ICTS Program - Entropy, Information and Order in Soft Matter*, Bangalore, India, September 2018.
114. *Disordered serendipidity: a glassy path to discovery*, Rome, Italy, September 2018.
113. *University of Toronto Chemistry Seminar*, Toronto, ON, April 2018.
112. *ICERM: Computation and Optimization of Energy, Packing, and Covering*, Providence, RI, April 2018.
111. *FSU Applied Mathematics Seminar*, Tallahassee, FL, February 2018.
110. *Beyond Mean-Field Theory*, Rome, Italy, January 2018.
109. *Geometrically Frustrated Self-Assembly*, Princeton, NJ, November 2017.
108. *University of Virginia Physics Seminar*, Charlottesville, VA, November 2017.
107. *Simons Group Meeting*, Paris, France, October 2017.
106. *10th Liquid Matter Conference*, Keynote Lecturer, Ljubljana, Slovenia, July 2017.
105. *Maynooth University Chemistry Seminar*, Maynooth, Ireland, May 2017.
104. *Hong Kong Polytechnic University Physics Seminar*, Hong Kong, May 2017.
103. *Shenzhen Graduate School of the Harbin Institute of Technology Seminar*, Shenzhen, China, May 2017.
102. *Cracking the Glass Problem Simons Foundation Annual Meeting*, New York, NY, March 2017.
101. *Systems with competing electrostatic and short-range interactions*, Warsaw, Poland, February 2017.
100. *Institut Lumière Matière de l'Université de Lyon Seminar*, Lyon, France, January 2017.
99. *Nestlé RDLS*, Lausanne, Switzerland, January 2017.
98. *Emory University Physics Seminar*, Atlanta, GA, December 2016.
97. *University of Waterloo Chemistry Seminar*, Waterloo, ON, November 2016.
96. *Kansas State University Physics Seminar*, Manhattan, KS, November 2016.
95. *Journées Cristech*, Autrans, France, October 2016.
94. *Yale University Mechanical Engineering and Materials Science Seminar*, New Haven, CT, September 2016.
93. *Packing Across Length Scales*, Shanghai, China, August 2016.
92. *Université de Grenoble Physics Seminar*, Grenoble, France, July 2016.
91. *Georgetown Physics Seminar*, Georgetown, DC, April 2016.
90. *NC-ACS Triangle Soft Matter Discussion Group*, Chapel Hill, NC, April 2016.

89. *APS March Meeting*, Baltimore, MD, March 2016.
88. *UNC-CH Physical Chemistry Seminar*, Chapel Hill, NC, January 2016.
87. *Extended WG3 meeting*, Ein Gedi, Israel, November 2015.
86. *East Carolina University Physics Seminar*, Greenville, NC, October 2015.
85. *The Role of Structure in Dynamical Arrest*, Mainz, Germany, July 2015.
84. *University of Waterloo Chemistry Seminar*, Waterloo, ON, May 2015.
83. *International Workshop on Dynamics in Viscous Liquids IV*, Montpellier, France, May 2015.
82. *Laboratoire PHENIX Seminar*, UPMC, Paris, France, April 2015.
81. *University of Oklahoma Chemistry Seminar*, Monroe, OK, March 2015.
80. *Dynamics in soft and hard condensed matter*, Buenos Aires, Argentina, March 2015.
79. *Paris Séminaire Vitreux*, ENS-Paris, France, February 2015.
78. *ENS-Paris Physics Colloquium*, France, January 2015.
77. *Hauptman-Woodward Medical Research Institute Seminar*, Buffalo, NY, December 2014.
76. *Cambridge Theoretical Chemistry Seminar*, Cambridge, UK, October 2014.
75. *Bristol Theoretical Physics Seminar*, Bristol, UK, October 2014.
74. *U Montpellier 2 Physics Seminar*, Montpellier, France, October 2014.
73. *Critical Phenomena in Random and Complex Systems*, Capri, Italy, September 2014.
72. *Spin Glasses: An old tool for new problems*, Cargèse, France, August 2014.
71. *American Conference of Theoretical Chemistry*, Telluride, CO, July 2014.
70. *ACS Colloids*, Philadelphia, PA, June 2014.
69. *Triangle Soft Matter*, Chapel Hill, NC, May 2014.
68. *U Oregon Chemistry Seminar*, Eugene, OR, May 2014.
67. *U Penn Condensed Matter Seminar*, Philadelphia, PA, February 2014.
66. *XLIII Winter Meeting on Statistical Physics*, Taxco, Mexico, January 2014.
65. *Leiden Lorenz Institute Seminar*, Leiden, Netherlands, December 2013.
64. *ESPCI, PCT-Gulliver Seminar*, Paris, France, December 2013.
63. *Roskilde University Glass and Time Seminar*, Roskilde, Denmark, November 2013.
62. *U Penn Chemistry Seminar*, Philadelphia, PA, November 2013.
61. *Stanford Physical Chemistry Seminar*, Stanford, CA, November 2013.
60. *UC Berkeley Statistical Mechanics Seminar*, Berkeley, CA, October 2013.
59. *Oak Ridge National Lab Computational Science Seminar*, Oak Ridge, TN, October 2013.
58. *Brandeis Physics Colloquium*, Waltham, MA, October 2013.
57. *UC Boulder Chemical Physics/Physical Chemistry Seminar*, Boulder, CO, October 2013.
56. *Penn State Physical Chemistry Seminar*, State College, PA, October 2013.
55. *Bucknell Physics Seminar*, Lewisburg, PA, October 2013.
54. *Caltech Chemical Physics Seminar*, Pasadena, CA, October 2013.
53. *UCLA Chemistry and Biochemistry Seminar*, Los Angeles, CA, September 2013.
52. *UCSB Physical/Theoretical Chemistry Seminar*, Santa Barbara, CA, September 2013.
51. *NYU Soft Condensed Matter Seminar*, New York, NY, September 2013.
50. *UW-Madison, Chemistry Seminar*, Madison, WI, September 2013.
49. *7th international Discussion Meeting on Relaxations in Complex Systems*, Barcelona, Spain, July 2013.
48. *MPI for Dynamics and Self-Organization Seminar*, Göttingen, Germany, July 2013.
47. *TU Berlin, IGRTG 1524 Colloquium*, Berlin, Germany, July 2013.
46. *CECAM: The Role of Interfaces in Crystallization*, Lausanne, Switzerland, May 2013.
45. *UIUC, Chemistry Department Seminar*, Champaign, IL, May 2013.

44. *University of Chicago James Franck Institute Seminar*, Chicago, IL, May 2013.
43. *Northwestern University Chemistry Department Seminar*, Evanston, IL, May 2013.
42. *University of Maryland Informal Statistical Physics Seminar*, College Park, MD, April 2013.
41. *APS March Meeting*, Baltimore, MD, March 2013.
40. *MRS Symposium*, Boston, MA, November 2012.
39. *Florida State University Chemistry Seminar*, Tallahassee, FL, October 2012.
38. *14th International Conference on the Crystallization of Biological Macromolecules*, Huntsville, AL, September 2012.
37. *Syracuse University Condensed Matter & Biological Physics Seminar*, Syracuse, NY, September, 2012.
36. *University of Waterloo Physics and Chemistry Seminars*, Waterloo, ON, September 2012.
35. *ACS Fall Meeting*, contributed talk, Philadelphia, PA, August 2012.
34. *Florida Annual Meeting and Exposition (FAME ACS)*, Tampa Bay, FL, May 2012.
33. *ACS Spring Meeting*, invited (award) poster, San Diego, CA, March 2012.
32. *APS March Meeting*, contributed talk, Boston, MA, February 2012.
31. *Unifying Concepts in Glass Physics V*, contributed talk, Paris, France, December 2011.
30. *Washington University Physics Seminar*, St. Louis, MO, October 2011.
29. *Sphere packing and amorphous materials*, Trieste, Italy, July 2011.
28. *Université Pierre et Marie Curie LPTMC Seminar*, Paris, France, June 2011.
27. *École Normale Supérieure Paris Physics Seminar*, Paris, France, June 2011.
26. *DLR Institute of Materials Physics in Space Seminar*, Köln, Germany, June 2011.
25. *Université du Luxembourg Physics Seminar*, Luxembourg, May 2011.
24. *4th International Soft Matter Workshop*, Cornwall, U.K., May 2011.
23. *International Workshop on Dynamics in Viscous Liquids*, Rome, Italy, March 2011.
22. *APS March Meeting*, Dallas, TX, contributed talk, March 2011.
21. *Bath Theoretical Physics Colloquium*, Bath, U.K., October 2010.
20. *Cambridge Theoretical Chemistry Seminar*, Cambridge, U.K., October 2010.
    ACS Fall National Meeting, Boston, MA, contributed talk, August 2010.
19. *CECAM Crystallisation: from colloids to pharmaceuticals*, Lausanne, Switzerland, July 2010.
18. *KITP Physics of Glasses: Relating Metallic Glasses to Molecular, Polymeric and Oxide Glasses*, Santa Barbara, CA, May 2010.
17. *APS March Meeting*, Portland, OR, contributed talk, March 2010.
16. *University of Kansas*, Lawrence, KS, December 2009.
15. *McGill University Chemistry Seminar*, Montréal, QC, November 2009.
14. *UNC-Chapel Hill Physical Chemistry Seminar*, Chapel Hill, NC, September 2009.
13. *NCSU Physics Seminar*, Raleigh, NC, March 2009.
12. *APS March Meeting*, Pittsburgh, PA, contributed talk, March 2009.
11. *University of Utah Physical Chemistry Seminar*, Salt Lake City, UT, February 2009.
10. *Surrey University Condensed Matter Seminar*, Guilford, UK, January 2009.
9. *Unifying Concepts in Glass Physics IV*, Kyoto, Japan, November 2008.
8. *Southeastern Theoretical Chemistry Association*, Tuscaloosa, AL, May 2008.
7. *Dutch Soft Matter Meeting*, Eindhoven, The Netherlands, April 2008.
6. *Université de Montréal Physics Seminar*, Montréal, QC, July 2007.
5. *CECAM Glasses meet glasses*, Lyon, France, June 2007.
4. *Lorentz Institute Seminar*, Leiden, The Netherlands, April 2007.
3. *JNCASR Nucleation, Aggregation and Growth Conference*, Bangalore, India, January 2007.
2. *Dutch Soft Matter Meeting*, Amsterdam, The Netherlands, December 2006.

1. *U Penn Center for Molecular Modeling Seminar*, Philadelphia, PA, January 2006.
0. *Yale University Mechanical Engineering Seminar*, New Haven, CT, January 2006.

Conference and Workshop Organization

ICHST 2025, Symposium: Beyond Knabenphysik: Women in the History of Quantum Physics, co-organizer, Dunedin, New Zealand, June 2025.

DKU – Duke Soft Matter Symposium 2025, co-organizer, Kunshan, China, May 2025.

11th ESHS conference, Symposium: Beyond Knabenphysik: Women in the History of Quantum Physics, co-organizer, Barcelona, Spain, September 2024.

ISMC2024, organizing committee, Raleigh, NC, July 2024.

American Conference on Theoretical Chemistry 2024, organizing committee, Chapel Hill, NC, June 2024.

APS March Meeting, GSNP Invited Session: DMFT for classical systems of interacting objects, co-organizer, Minneapolis, MN, March 2024.

CECAM: Recent advances on the glass problem, co-organizer, virtual, January 2022.

Simons Collaboration on Cracking the Glass Problem Seminar Series, co-organizer, virtual, May 2020-September 2021

CECAM: Recent advances on the glass problem, co-organizer, co-organizer, virtual, January 2021.

APS March Meeting, GSNP Invited Session, Glassy dynamics: from simple models to biological tissues, co-organizer, virtual, March 2021.

40 Years of Replica Symmetry Breaking, 30 years of RFOT, co-organizer, Rome, Italy, September 2019.

APS March Meeting, GSOFT/GSNP Invited Session: Marginal Stability in Amorphous Materials and Beyond, co-organizer, Boston, MA, March 2019.

KITP Workshop: The Rough High-Dimensional Landscape Problem, co-organizer, Santa Barbara, CA, January–February 2019.

APS March Meeting, GSOFT Program Chair, Los Angeles, CA, March 2018.

Boulder Summer School on Condensed Matter Physics: Frustrated and Disordered Systems, co-organizer, Boulder, CO, July 2017.

APS March Meeting GSOFT/DBIO Invited Session: Biological Materials Self-Assembly, co-organizer, New Orleans, March 2017.

CECAM Workshop: Recent Advances on the Glass and Jamming Transitions, co-organizer, Lausanne, Switzerland, January 2017.

ICERM Workshop: Stochastic topology and thermodynamic limits, co-organizer, Providence, RI, October 2016.

CECAM Workshop: The Physics of Protein Self-Assembly, co-organizer, Lausanne, Switzerland, June 2015.

Unifying Concepts in Glass Physics VI, co-organizer, Aspen, CO, February 2015.

CUNY-GC Workshop: Shaping Amorphous Thoughts – Recent Advances in Glass and Jamming Physics, New York, NY, May 2014.

APS March Meeting GSNP Invited Session: A Soft Matter Perspective on Protein Assembly, organizer, Denver, CO, March 2014.

ACS March Meeting DCP Focus Session: Physics of glasses and viscous liquids, co-organizer, Baltimore, MD, March 2013.

SERC Conference Solar Energy Research Center, scientific committee, Durham, NC, January 2012.

Dynamics Days 2011, scientific committee, Chapel Hill, NC, January 2011.

MPI Particulate Matter: Does Dimensionality Matter?, co-organizer, Dresden, Germany, June 2010.

Southeastern Theoretical Chemistry Association, co-organizer, Durham, NC. May 2009.