

Brenden R. Ortiz

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Education / Appointments:

2023 – present:	Distinguished Staff Fellow	Oak Ridge National Laboratory, TN
2019 – present:	Postdoctoral Research Fellow	UC Santa Barbara, Santa Barbara, CA
2013 – 2018:	Ph.D. Material Science, GPA 4.0	Colorado School of Mines, Golden, CO
2009 – 2013:	B.S. Engineering Physics, GPA 4.0	Colorado School of Mines, Golden, CO

Awards:

2022:	Oakridge National Laboratory Distinguished Staff (Wigner) Fellowship Award Fellowship program aimed to cultivate future scientific leaders within US national laboratory network.
2022:	Bright Horizon Global Foundation Materials Department Service Award Award through Bright Horizon Global Foundation, given for “outstanding contributions to shared facilities and dedication to mentorship.”
2019:	Elings Prize Fellowship in Science Postdoctoral fellowship awarded through UC Santa Barbara and the California NanoSystems Institute to support research, travel, and professional development.
2018:	Rath Research Award Award presented to graduating Ph.D. student for the “Best Thesis with Potential for the Greatest Domestic Social Impact”
2009:	Boettcher Scholar Colorado unique, merit and service-based scholarship including full tuition, room/board, and stipend for 4 years. Awarded to 42 students annually.

Research Focus:

<i>Postdoctoral Work</i> UC Santa Barbara	2019 – Current Materials Dept.
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Design of material platforms for the exploration of novel phenomenon represents a key challenge to material scientists. For example, the hunt for topological superconductivity is tightly linked with the search for Majorana fermions and the potential for solid-state Majorana-based quantum computing. We focus on harmonizing materials design/discovery with high-quality characterization to accelerate the identification and vetting of candidates that could host a variety of exotic physics (e.g. Weyl semimetals, topological superconductors, quantum spin liquids). With new material platforms in hand, we also focus on in-depth study of new materials using a variety of scattering techniques, ranging from inelastic neutron scattering to resonant X-ray diffraction.

<i>Doctoral Work</i> Colorado School of Mines	2013 – 2018 Physics Dept.
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In the spirit of the Materials Genome Initiative (MGI), we developed new metrics for the thermoelectric quality factor which are accessible through high-throughput computation. We have leveraged strengths in material synthesis and computational horsepower to discover multiple new classes of promising thermoelectric materials. Furthermore, we tackle problems which are cross-cutting through the semiconductor industry, including doping and defect formation. In the past few years, success of high-throughput computational efforts within the MGI have revealed new opportunities within materials science. The rapid identification of materials and the emergence of machine learning as an adaptive tool promises to further enhance our search for functional materials. However, the field of Materials Science is still a heavily data-limited regime. The potential of machine learning as a transformative technique has inspired our recent work to focus on the development of high-throughput synthetic techniques for bulk samples alongside high-throughput characterization.

Mentorship and Outreach:

2021-2022 : Postdoctoral mentor for Quantum Foundry REU (Research Experience for Undergraduates), a program aimed to provide research experience to talented undergraduates from across the country. (12 week program, 40 hours/week)

Mentees:

Miles Knudtson (2022-present), Defect control in $\text{Pr}_2\text{Sn}_2\text{O}_7$ powders
 Malia Gundayao (2022), Discovery of new Yb-based metallic kagome magnets
 Soren Bear (2021), Software design for cryogenic strain-cell measurements
 Michael Garcia (2021), Discovery of $\text{Ln}_2\text{InSbO}_7$ pyrochlore oxides
 Marcos Marmolejo (2021), Single crystal growth of $\text{Ln}_2\text{InSbO}_7$ pyrochlore oxides

2020 – 2021: Instructor for California Nanosystems Institute School for Scientific Thought (CNSI SST). 5-week NSF funded outreach and teacher training program aimed at bringing the fundamentals of quantum mechanics and quantum computing to diverse groups of high school students. Program was structured as a virtual class with an at-home lab component. My focus was on crystallography and crystal growth. (1h class per week, approx 6 weeks, 15 students)

2013 – 2019: Mentor and cofounder for BOTS (Bridge Opportunities for Transfer Student Success), an outreach program to provide personal/professional mentorship for talented community college students. (10+ week program, 40 hours/week)

Mentees:

Jaime Corchado (2013), Design of thermoelectric measurement software
 Armando Lopez (2014-2016), Synthesis of novel Zintl thermoelectrics
 Chamai Shahim (2015), Design of thermoelectric measurement hardware
 Nichole Schneider (2018), The Zn-V-Te and Cu-V-Te systems
 Erik Benson (2018-2019), Discovery and properties of n-type Zintl RbGaSb_4
 Tara Braden (2017-2019), Exploratory synthesis of new Sb-based Zintls

2015 – 2019: Graduate mentor for REU (Research Experience for Undergraduates), a program aimed to provide research experience to talented undergraduates from across the country. (10 week program, 40 hours/week)

Mentees:

Rachel Mow (2015), Synthesis of novel Zintl thermoelectric KAlSb_4
 Kirstine Dalgaard (2015), Alloying in the ZnSiP_2 - ZnGeP_2 solar absorber
 Kira Ragazzo (2015), Synthesis of ZnSiP_2 single crystals from Zn-flux
 Mayssa Gregoire (2017), Alloying in the $\text{Ag}_8(\text{Ge,Sn})(\text{Se,Te})_6$ system

Publications (please also check the [Google Scholar](#) page):

75. J. Frassinetti, P. Bonfa, G. Allodi, E. Garcia, R. Cong, **B. R. Ortiz**, S. D. Wilson, R. De Renzi, V. F. Mitrovic, S. Sanna, Microscopic nature of the charge-density wave in kagome superconductor RbV_3Sb_5 , *arXiv:2210.06523*, (2022)

74. D. Werhahn, **B. R. Ortiz**, A. K. Hay, S. D. Wilson, R. Seshadri, and D. Johrendt, The kagome metals RbTi_3Bi_5 and CsTi_3Bi_5 , *Z. Naturforsch. B*, (2022) [[URL](#)]

73. D. Subires, A. Korshunov, A. H. Said, L. Sanchez, **B. R. Ortiz**, S. D. Wilson, A. Bosak, S. Blanco-Canosa, Order-disorder Peierls instability in the kagome metal $(\text{Cs,Rb})\text{V}_3\text{Sb}_5$, *arXiv:2209.13342*, (2022)

72. D. R. Saykin, C. Farhang, E. D. Kountz, D. Chen, **B. R. Ortiz**, C. Shekhar, C. Felser, S. D. Wilson, R. Thomale, J. Xia, and A. Kapitulnik, High Resolution Polar Kerr Effect Studies of CsV_3Sb_5 : Tests for Time Reversal Symmetry Breaking Below the Charge Order Transition, *arXiv:2209.10570*, (2022)

71. **B. R. Ortiz**, P. M. Sarte, G. Pokharel, M. Garcia, M. Marmolejo, and S. D. Wilson, Traversing the pyrochlore stability diagram: Microwave-assisted synthesis and discovery of mixed *B*-site LnInSbO_7 family, *Phys. Rev. Mater.*, (2022) [[URL](#)]

70. A. A. Tsirlin, **B. R. Ortiz**, M. Dressel, S. D. Wilson, S. Winnerl, E. Uykur, Effect of nonhydrostatic pressure on the superconducting kagome metal CsV_3Sb_5 , *arXiv:2209.02794*, (2022)

69. **B. R. Ortiz**, P. M. Sarte, A. H. Avidor, and S. D. Wilson, Defect control in the Heisenberg-Kitaev candidate material NaRuO_2 , *Phys. Rev. Mater.*, (2022) [[URL](#)]

- 68.** L. Kautzsch, Y. M. Oey, H. Li, Z. Ren, **B. R. Ortiz**, R. Seshadri, J. Ruff, Z. Wang, I. Zeljkovic, S. D. Wilson, Incommensurate charge-stripe correlations in the kagome superconductor $\text{CsV}_3\text{Sb}_{5-x}\text{Sn}_x$, *arXiv:2207.10608*, (2022)
- 67.** L. Kautzsch, Y. M. Oey, H. Li, Z. Ren, **B. R. Ortiz**, R. Seshadri, J. Ruff, Z. Wang, I. Zeljkovic, S. D. Wilson, Incommensurate charge-stripe correlations in the kagome superconductor $\text{CsV}_3\text{Sb}_{5-x}\text{Sn}_x$, *arXiv:2207.10608*, (2022)
- 66.** Y. Luo, S. Peng, S. M.-L. Teicher, L. Huai, Y. Hu, Y. Han, **B. R. Ortiz**, Z. Liang, Z. Wei, J. Shen, Z. Ou, B. Wang, Y. Miao, M. Guo, M. Hashimoto, D. Lu, Z. Qiao, Z. Wang, S. D. Wilson, X. Chen, J. He, Electronic states dressed by an out-of-plane supermodulation in the quasi-two-dimensional kagome superconductor CsV_3Sb_5 , *Phys. Rev. B*, (2022) [URL]
- 65.** M. Roppongi, K. Ishihara, Y. Tanaka, K. Ogawa, K. Okada, S. Liu, K. Mukasa, Y. Mizukami, Y. Uwatoko, R. Grasset, M. Konczykowski, **B. R. Ortiz**, S. D. Wilson, K. Hashimoto, and T. Shibauchi, Bulk evidence of anisotropic s-wave pairing with no sign change in the kagome superconductor CsV_3Sb_5 , *arXiv:2206.02580*, (2022)
- 64.** M. Roppongi, K. Ishihara, Y. Tanaka, K. Ogawa, K. Okada, S. Liu, K. Mukasa, Y. Mizukami, Y. Uwatoko, R. Grasset, M. Konczykowski, B. R. Ortiz, S. D. Wilson, K. Hashimoto, and T. Shibauchi, Bulk evidence of anisotropic s-wave pairing with no sign change in the kagome superconductor CsV_3Sb_5 , *arXiv:2206.02580*, (2022)
- 63.** G. Pokharel, **B. R. Ortiz**, P. M. Sarte, L. Kautzsch, G. Wu, J. Ruff, and S. D. Wilson, Highly anisotropic magnetism in the vanadium-based kagome metal TbV_6Sn_6 , *arXiv:2205.15559*, (2022)
- 62.** Y. Oey, F. Kaboudvand, **B. R. Ortiz**, R. Seshadri, and S. D. Wilson, Tuning charge-density wave order and superconductivity in the kagome metals $\text{KV}_3\text{Sb}_{5-x}\text{Sn}_x$ and $\text{RbV}_3\text{Sb}_{5-x}\text{Sn}_x$, *Phys. Rev. Mater.*, (2022) [URL]
- 61.** **B. R. Ortiz**, P. M. Sarte, A. H. Avidor, A. Hay, E. Kenney, A. I. Kolisneikov, A. A. Aczel, C. M. Brown, C. Wang, M. J. Graf, R. Seshadri, L. Balents, and S. D. Wilson, Quantum disordered ground state in the Heisenberg-Kitaev candidate NaRuO_2 , *preprint available at Research Square* [<https://doi.org/10.21203/rs.3.rs-1551865/v1>], (2022)
- 60.** **B. R. Ortiz**, M. M. Bordelon, P. Bhattacharyya, G. Pokharel, P. M. Sarte, L. Posthuma, T. Petersen, M. S. Eldeeb, G. E. Granroth, C. R. Dela-Cruz, S. Calder, D. L. Abernathy, L. Hozoi, and S. D. Wilson, Electronic and structural properties of RbCeX_2 (X_2 : O_2 , S_2 , SeS , Se_2 , TeSe , Te_2), *Phys. Rev. B*, (2022) [URL]
- 59.** Y. Xu, Z. Ni, Y. Liu, **B. R. Ortiz**, S. D. Wilson, B. Yan, L. Balents, and L. Wu, Universal three-state nematicity and magneto-optical Kerr effect in the charge density waves in AV_3Sb_5 , *arXiv:2204.10116*, (2022)
- 58.** H. Li, H. Zhao, **B. R. Ortiz**, Y. Oey, Z. Wang, S. D. Wilson, and I. Zeljkovic, Emergence of unidirectional coherent quasiparticles from high-temperature rotational symmetry broken phase of AV_3Sb_5 superconductors, *arXiv:2203.15057*, (2022)
- 57.** M. Kang, S. Feng, J. Yoo, **B. R. Ortiz**, Y. Oey, S. H. Ryu, J. Kim, C. Jozwiak, A. Bostwick, E. Rotenberg, E. Kaxiras, J. Checkelsky, S. D. Wilson, J.-H. Park, and R. Comin, Microscopic structure of three-dimensional charge order in kagome superconductor AV_3Sb_5 and its tunability, *arXiv:2202.01902*, (2022)
- 56.** L. Huai, Y. Luo, S. M.-L. Teicher, **B. R. Ortiz**, K. Wang, S. Peng, Z. Wei, J. Shen, B. Wang, Y. Miao, X. Sun, Z. Ou, S. D. Wilson, and J. He, Surface-induced orbital-selective band reconstruction in kagome superconductor CsV_3Sb_5 , *Chin. Phys. B*, (2022) [URL]
- 55.** Y. Hu, X. Wu, **B. R. Ortiz**, X. Han, N. C. Plumb, S. D. Wilson, A. P. Schnyder, and M. Shi, Coexistence of Tri-Hexagonal and Star-of-David Pattern in the Charge Density Wave of Kagome Superconductor AV_3Sb_5 , *arXiv:2201.06477*, (2022)
- 54.** S. Wu, **B. R. Ortiz**, H. Tan, S. D. Wilson, B. Yan, T. Birol, G. Blumberg, Charge density wave order in the kagome metal AV_3Sb_5 ($A = \text{Cs}, \text{Rb}, \text{K}$), *Phys. Rev. B*, (2022) [DOI]
- 53.** M. Wenzel, **B. R. Ortiz**, S. D. Wilson, M. Dressel, A. A. Tsirlin, and E. Uykur, Optical study of

- RbV₃Sb₅: Multiple density-wave gaps and phonon anomalies, *Phys. Rev. B*, (2022) [\[URL\]](#)
- 52.** H. Miao, H. X. Li, W. R. Meier, A. Huon, H. N. Lee, A. Said, H. C. Lei, **B. R. Ortiz**, S. D. Wilson, J. X. Yin, M. Z. Hasan, Z. Wang, H. Tan, and B. Yan, Geometry of the charge density wave in the kagome metal AV₃Sb₅, *Phys. Rev. B*, (2021) [\[DOI\]](#)
- 51.** Y. M. Oey, **B. R. Ortiz**, F. Kaboudvand, J. Frassinetti, E. Garcia, S. Sanna, V. Mitrovic, R. Seshadri, and S. D. Wilson, Fermi level tuning and double-dome superconductivity in the kagome metals CsV₃Sb_{5-x}Sn_x, *Phys. Rev. Mater.*, (2021) [\[DOI\]](#)
- 50.** F. Du, R. Li, S. Luo, Y. Gong, Y. Li, S. Jiang, **B. R. Ortiz**, Y. Liu, X. Xu, S. D. Wilson, C. Cao, Y. Song, H. Yuan, Superconductivity modulated by structural phase transitions in pressurized vanadium-based kagome metals, *Phys. Rev. B*, (2022) [\[DOI\]](#)
- 49.** S. Peng, Y. Han, G. Pokharel, J. Shen, Z. Li, M. Hashimoto, D. Lu, B. R. Ortiz, Y. Luo, H. Li, M. Guo, B. Wang, S. Cui, Z. Sun, Z. Qiao, S. D. Wilson, and J. He, Realizing kagome band structure in two-dimensional kagome surface states of RV₆Sn₆, *Phys. Rev. Lett.*, (2021) [\[DOI\]](#)
- 48.** G. Pokharel, S. ML. Teicher, **B. R. Ortiz**, P. M. Sarte, G. Wu, S. Peng, J. He, R. Seshadri, S. D. Wilson, Electronic properties of the topological kagome metals YV₆Sn₆ and GdV₆Sn₆, *Phys. Rev. B*, (2021) [\[DOI\]](#)
- 47.** F. Du, S. Luo, R. Li, **B. R. Ortiz**, Y. Chen, S. D. Wilson, Y. Song, H. Yuan, Evolution of superconductivity and charge order in pressurized RbV₃Sb₅, *Chin. Phys. B*, (2022) [\[URL\]](#)
- 46.** L. Yin, D. Zhang, C. Chen, G. Ye, F. Yu, **B. R. Ortiz**, S. Luo, W. Duan, H. Su, J. Ying, S. D. Wilson, X. Chen, H. Yuan, Y. Song, X. Lu, Strain-sensitive superconductivity in kagome metals KV₃Sb₅ and CsV₃Sb₅ probed by point-contact spectroscopy, *Phys. Rev. B*, (2021) [\[DOI\]](#)
- 45.** Y. Hu, X. Wu, **B. R. Ortiz**, S. Ju, X. Han, J. Z. Ma, N. C. Plumb, M. Radovic, R. Thomale, S. D. Wilson, A. P. Schnyder, M. Shi, Rich nature of Van Hove Singularities in Kagome superconductor CsV₃Sb₅, *Nat. Commun.*, (2022) [\[DOI\]](#)
- 44.** Y. Luo, S. Peng, S. M. L. Teicher, L. Huai, Y. Hu, **B. R. Ortiz**, Z. Wei, J. Shen, Z. Ou, B. Wang, Y. Miao, M. Guo, M. Shi, S. D. Wilson, J-F. He, Distinct band reconstructions in kagome superconductor CsV₃Sb₅, *arXiv:2106.01248*, (2021)
- 43.** M. Kang, S. Fang, J-K. Kim, **B. R. Ortiz**, J. Yoo, B-G. Park, S. D. Wilson, J-H. Park, R. Comin, Twofold van Hove singularity and origin of charge order in topological kagome superconductor CsV₃Sb₅, *Nat. Phys.*, (2021) [\[DOI\]](#)
- 43.** A. A. Tsirlin, P. Fertey, **B. R. Ortiz**, B. Klis, V. Merkl, M. Dressel, S. D. Wilson, E. Uykur, Role of Sb in the superconducting kagome metal CsV₃Sb₅ revealed by its anisotropic compression, *Sci. Post Phys.*, (2022) [\[DOI\]](#)
- 42.** N. Shumiya, M. S. Hossain, J-X. Yin, Y-X. Jiang, **B. R. Ortiz**, H. Liu, Y. Shi, Q. Yin, H. Lei, S. S. Zhang, G. Chang, Q. Zhang, T. A. Cochran, D. Multer, M. Litskevich, Z-J. Cheng, X. P. Yang, Z. Guguchia, S. D. Wilson, M. Z. Hasan, Intrinsic nature of chiral charge order in the kagome superconductor RbV₃Sb₅, *Phys. Rev. B*, (2021) [\[DOI\]](#)
- 42.** E. Uykur, **B. R. Ortiz**, O. Iakutkina, M. Wenzel, S. D. Wilson, M. Dressel, A. A. Tsirlin, Low-energy optical properties of the non-magnetic kagome metal CsV₃Sb₅, *Phys. Rev. B*, (2021) [\[DOI\]](#)
- 41.** Y. Hu, S. ML. Teicher, **B. R. Ortiz**, Y. Luo, S. Peng, L. Huai, JZ. Ma, NC. Plumb, S. D. Wilson, J-F. He, M. Shi, Charge-order-assisted topological surface states and flat bands in the kagome superconductor CsV₃Sb₅, *Sci. Bull.*, (2021) [\[DOI\]](#)
- 40.** N. Ratcliff, L. Hallett, **B. R. Ortiz**, S. D. Wilson, J. W. Harter, Coherent phonon spectroscopy and interlayer modulation of charge density wave order in the kagome metal CsV₃Sb₅, *Phys. Rev. Mater.*, (2021) [\[DOI\]](#)
- 40.** H. Li, H. Zhao, **B. R. Ortiz**, T. Park, M. Ye, L. Balents, Z. Wang, S. D. Wilson, I. Zeljkovic, Rotation symmetry breaking in the normal state of a kagome superconductor KV₃Sb₅, *Nat. Phys.*, (2022) [\[DOI\]](#)
- 39.** **B. R. Ortiz**, S. ML. Teicher, L. Kautzsch, P. M. Sarte, N. Ratcliff, J. Hartern, J. PC. Ruff, R.

- Seshadri, S. D. Wilson, Fermi surface mapping and the nature of charge density wave order in the kagome superconductor CsV_3Sb_5 , *Phys. Rev. X*, (2021) [\[DOI\]](#)
- 38.** E. Uykur, **B. R. Ortiz**, S. D. Wilson, M. Dressel, and A. A. Tsirlin, Optical detection of density-wave instability in the kagome metal KV_3Sb_5 , *NPJ Quantum Mater.*, (2022) [\[DOI\]](#)
- 37.** H. Zhao, H. Li, **B. R. Ortiz**, S. M.L. Teicher, T. Park, M. Ye, Z. Wang, L. Balents, S. D. Wilson, and I. Zeljkovic, Cascade of correlated electron states in the kagome superconductor CsV_3Sb_5 , *Nature*, (2021) [\[DOI\]](#)
- 36.** F. Du, S. Luo, **B. R. Ortiz**, Y. Chen, W. Duan, D. Zhang, X. Lu, S. D. Wilson, Y. Song, H. Yuan, Pressure-induced double superconducting domes and charge instability in the kagome metal KV_3Sb_5 , *Phys. Rev. B*, (2021) [\[DOI\]](#)
- 35.** Y.-X. Jiang, J.-X. Yin, M. M. Denner, N. Shumiya, **B. R. Ortiz**, G. Xu, Z. Guguchia, J. He, M. S. Hossain, X. Liu, J. P.C. Ruff, L. Kautzsch, S. S. Zhang, G. Chang, I. Belopolski, Q. Zhang, T. A. Cochran, D. Multer, M. Litskevich, Z.-J. Cheng, X. P. Yang, Z. Wang, R. Thomale, T. Neupert, S. D. Wilson, M. Z. Hasan, Unconventional chiral charge order in kagome superconductor KV_3Sb_5 , *Nat. Mater.*, (2021) [\[DOI\]](#)
- 34.** **B. R. Ortiz**, P. M. Sarte, E. M. Kenney, S.M.L. Teicher, R. Seshadri, M. J. Graf, and S. D. Wilson, Superconductivity in the Z2 kagome metal KV_3Sb_5 , *Phys. Rev. Mater.*, (2021) [\[DOI\]](#)
- 33.** I. A. Shojaei, S. Pournia, C. Le, **B. R. Ortiz**, G. Jnawali, F.-C. Zhang, S. D. Wilson, H. E. Jackson, and L. M. Smith, A Raman Probe of Phonons and Electron-phonon Interactions in NbIrTe_4 , *Sci. Reports*, (2021) [\[DOI\]](#)
- 32.** E. M. Kenney, **B. R. Ortiz**, C. Wang, S. D. Wilson, and M. J. Graf, Absence of local moments in the kagome metal KV_3Sb_5 as determined by muon spin spectroscopy, *J. Phys. Condens. Matter*, (2021) [\[DOI\]](#)
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- 30.** B.L. Levy-Wendt, **B. R. Ortiz**, L. C. Gomes, K.H. Stone, D. Passarello, E. Ertekin, E. S. Toberer, and M. F. Toney, Understanding Cu incorporation in the $\text{Cu}_{2x}\text{Hg}_{2-x}\text{GeTe}_4$ structure using resonant x-ray diffraction, *Phys. Rev. Mater.*, (2021) [\[DOI\]](#)
- 28.** P. M. Sarte, C. Stock, **B. R. Ortiz**, K. H. Hong, and S. D. Wilson, Van Vlack excitons in Ca_2RuO_4 , *Phys. Rev. B*, (2020) [\[DOI\]](#)
- 27.** **B. R. Ortiz**, S. M.L. Teicher, Y. Hu, J. L. Zuo, P. M. Sarte, E. C. Schueller, Milinda A.M. Abeykoon, M. J. Krogstad, S. Rosenkranz, R. Osborn, R. Seshadri, L. Balenta, J. He, and S. D. Wilson, CsV_3Sb_5 : a Z2 topological kagome metal with a superconducting ground state, *Phys. Rev. Lett.*, (2020) [\[DOI\]](#)
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- 25.** R. Schnepf, B. Levy-Wendt, M. Tellekamp, **B. R. Ortiz**, C. Melamed, L. Schelhas, K. Stone, M. Toney, E. S. Toberer, and A. Tamboli, Using Resonant Energy X-ray Diffraction to Extract Chemical Order Parameter in Ternary Semiconductors, *J. Mater. Chem. C*, (2020) [\[DOI\]](#)
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- 23.** J. E. Rea, C. J. Oshman, A. Singh, J. Alleman, G. Buchholz, P. A. Parilla, J. M. Adamczyk, H-N. Fujishin, **B. R. Ortiz**, T. Braden, E. Bensen, R. T. Bell, N. P. Siegel, D. S. Ginley, and E. S. Toberer, Prototype latent heat storage system with aluminum-silicon as a phase change material and a Stirling engine for electricity generation, *Energy Convers. Manag.*, (2019) [\[DOI\]](#)

- 22. B. R. Ortiz**, L. C. Gomes, J. R. Morey, M. Winiarski, M. Bordelon, J. S. Mangum, I. W-H. Oswald, J. A. Rodriguez-Rivera, J. R. Neilson, S. D. Wilson, E. Ertekin, T. M. McQueen, and E. S. Toberer, New kagome prototype materials: discovery of KV_3Sb_5 , RbV_3Sb_5 , and CsV_3Sb_5 , *Phys. Rev. Mater.*, (2019) [\[DOI\]](#)
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- 19.** C. M. Crawford, **B. R. Ortiz**, P. Gorai, V. Stevanović, and E. S. Toberer, Experimental and Computational Phase Boundary Mapping of $\text{Co}_4\text{Sn}_6\text{Te}_6$ *J. Mater. Chem. A.*, 6, 24175 - 24185, (2018) [\[DOI\]](#)
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