ORION BOYD BERRYMAN

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Lab Website: http://hs.umt.edu/chemistry/lab/berryman/

EMPLOYMENT

University of Montana, Missoula
Full Professor **2024 – pres.**
Department of Chemistry and Biochemistry
Director of Small Molecule X-ray Diffraction Facility
Center for Biomolecular Structure and Dynamics

University of Montana, Missoula
Associate Professor **2018 – 2024**
Department of Chemistry and Biochemistry

University of Montana, Missoula
Assistant Professor **2012 – 2018**
Department of Chemistry and Biochemistry

The Scripps Research Institute, La Jolla, CA
Postdoctoral researcher (Mentor: Julius Rebek Jr.) **2008 – 2012**
The Skaggs Institute for Chemical Biology

EDUCATION

University of Oregon, Eugene
Ph. D. in Organic Chemistry (Advisor: Darren W. Johnson) **2003 – 2008**
GPA 3.95

University of New Hampshire, Durham **1999 – 2003**
B.A. in Organic Chemistry
Magna Cum Laude
GPA 3.59
Minor: Music – Trumpet

FUNDING

NSF DRP – How Charge, Sterics and HBeXB Influence Assembly of Higher-Order Helicates **2023 – 2026**
- Berryman, P.I. $575,457

NSF DRP – Hydrogen Bond Liquid Chromatography **2023 – 2026**
- Berryman, Co P.I. $450,000

NSF MRI – Track 1 Acquisition of a 600 MHz NMR Spec. for Research Teaching & Outreach **2023 – 2026**
- Berryman, Co P.I. $1,397,480

NSF EPSCoR CREWS Workforce Development Summer Internship $5,000 **2023**
Murdock Commercial Initiation Project $150,000 **2022**
Murdock Partners in Science $19,000 **2022**
SCF for Griz Cluster computer hardware $54,502 **2021**
SCF for Gaussian 16 software $5,600 **2021**

SIEF – Digital document camera $450	**2021**
NSF DRP – Hydrogen Bond Enhanced Halogen Bond (HBeXB) for Anion Transport	**2021 – 2024**
- Berryman, Lead P.I. $420,000	
Wenner-Gren Fellowship $10,000	**2019 – 2020**
University Small Grant Program to Mentor Women in Science $5,000	**2020**
NIH CoBRE Pilot Project $20,000	**2019 – 2020**
SIEF – Aluminum Hot Plates $2,933	**2022**
NSF CAREER – Halogen Bonding Catalysts	**2016 – 2021**
- Berryman, Lead P.I. $689,587	
SIEF – Color 3D printer for tactile teaching $14,805	**2017**
MREDI Research Initiative – Instrumentation for Water Quality Monitoring	**2015**
- Berryman, Co-P.I. $319,054	
NSF Major Research Instrumentation program – Single Crystal X-ray Diffractometer	**2013**
- Berryman, lead P.I. $378,571	
UM Faculty Professional Enhancement Program $500	**2012**
NIH subproject of grant 8P20GM103546-02 (CoBRE)	**2012**
University of Montana Start-up funds	**2012**
NIH Ruth L. Kirschstein Postdoctoral Fellowship	**2010 – 2012**
Skaggs Postdoctoral Fellow	**2008 – 2009**
NSF Integrative Graduate Education and Research Traineeship (IGERT)	**2005 – 2008**
University of Oregon Research Associate	**2003 – 2005**
UNH Summer Undergraduate Research Fund (SURF)	**2002 – 2003**

AWARDS

Invited Speaker at Eastern Washington University	**2024**
Invited Speaker at the Aqueous Supramolecular Workshop – Bozeman, MT	**2023**
Invited to chair an organic symposium at the ACS NORM – Bozeman, MT	**2023**
Invited Speaker at ACS NORM – Bozeman, MT	**2023**
Invited Seminar at Baylor University – Waco, TX	**2023**
Invited Speaker at the International Symposium on Halogen Bonding – Chiba, Japan	**2022**
Invited Speaker at the International Symposium on Macrocyclic and Supramolecular Chem	**2022**
Invited Speaker at third workshop on Aromatic Foldamers – Leeds, UK	**2022**
Invited Speaker at the Aqueous Supramolecular Workshop – Bozeman, MT	**2022**
Invited Seminar at University of Uppsala – Uppsala, Sweden	**2020**
Invited Seminar at Norway Organic Chemistry Winter Meeting – Skeikampen, Norway	**2020**
Invited Chemical Review article on “Helical Anion Foldamers in Solution”	**2020**
Wenner-Gren Award – Sweden	**2019**
Invited chapter in “Halogen Bonding in Solution”	**2019**
Invited Seminar at Bochum University – Bochum, Germany	**2020**
Invited Speaker at Julius Rebek Jr. Symposium – Shanghai, China	**2019**
Invited Seminar at University of Idaho – Moscow, ID	**2019**
Invited Seminar at Montana State University – Bozeman, MT	**2018**
Research highlighted on the SciShow interview “Molecular Architecture”	**2017**
https://www.youtube.com/watch?v=0qpZdri0zEc	
Research highlighted in Atlas of Science	**2017**

"Halogen Bonding Assembly of an Iodide-Binding Triple Helix"
https://atlasofscience.org/halogen-bonding-assembly-of-an-iodide-binding-triple-helix/#more-20385
Invited to chair microsymposium at the 24th IUCr – Hyderabad, India **2017**
Invited Seminar at UO – Eugene, OR **2017**
Research highlighted on the SciShow talk show "Building New Molecules" **2016**
https://www.youtube.com/watch?v=zmI_aKumRrk
Rising Star Honorarium at the ISXB conference – Gothenburg, Sweden **2016**
Invited article in Acta Crystallographica Section B special issue on halogen bonding **2016**
Invited Seminar at EWU – Cheney, WA **2016**
Invited Seminar at Montana State University – Bozeman, MT **2016**
Invited chapter in "Aspects of Multi-Component Crystals: Synthesis, Concepts and Function" **2016**
Invited Seminar at Pacifichem 2015 – Honolulu, HI **2015**
Invited chapter in *Comprehensive Supramolecular Chemistry 2nd edition* **2015**
Invited Seminar at University of Wisconsin – Eau Claire, WI **2015**
Invited Seminar at University of New Hampshire – Durham, NH **2014**
Invited Seminar at Washington State University – Pullman, WA **2014**
Keynote Speaker Local ACS meeting – Helena, MT **2014**
Cottrell Scholar New Faculty Workshop – Washington, D.C. **2013**
Invited *Israel Journal of Chemistry* Review Article **2011**
SOF Travel Grant – March 2012, ACS National Meeting **2011**
Invited *Chemical Science* Article **2010**
Invited *Chemical Communications* Feature Article **2009**
Top chemistry oral presentation – TSRI Fall Research Symposium **2010**
Travel grant – ISMSC in Salice Terme, Italy **2007**
Invited collaborative oral presentation at the Materials Science Retreat **2006**
Dean's List – University of New Hampshire **2000 – 2003**
High Honors – University of New Hampshire **2000 – 2003**

PEER-REVIEWED PUBLICATIONS

h-index: 24 Cited 2,051 times

† *Denotes undergraduate co-authors* * Denotes corresponding author

54. John, E. A.; Riel, A. M. S.; Wieske, L. H. E.; Ray, D.; Decato, D. A.; Boller, M.; Takacs, Z.; Erdelyi, M.; Bryantsev, V. S.*; **Berryman, O. B.*** "Taming Molecular Folding: Anion-Templated Foldamers with Tunable Quaternary Structures." *Journal of the American Chemical Society*, **2024**, *146*, 16419-16427. https://doi.org/10.1021/jacs.3c14820

53. Suating, P.; Kimberly, L. B.; Ewe, M. B.; Chang, S. L.; Fontenot, J. M.; Sultane, P. R.; Bielawski, C. W.; Decato, D. A.; **Berryman, O. B**.; Taylor, A. B.; Urbach, A. R. "Cucurbit[8]uril Binds Nonterminal Dipeptide Sites with High Affinity and Induces a Type II β-Turn." *Journal of the American Chemical Society*, **2024**, *146*, 7649-7657. https://doi.org/10.1021/jacs.3c14045

52. Sun, J.; Decato, D. A.; Bryantsev, V. S.; John, E. A.; **Berryman, O. B**.* "The Interplay Between Hydrogen and Halogen Bonding: Substituent Effects and their Role in the Hydrogen Bond Enhanced Halogen Bond." *Chemical Science*, **2023**, *14,* 8924-8935. https://doi.org/10.1039/D3SC02348F

51. Decato, D. A.*; Janke, M.†; **Berryman, O. B.*** "Conformational Polymorphism of 3-(azidomethyl)benzoic acid." *Acta Crystallographica Section C*. **2023**, *79*, 344-352. https://doi.org/10.1107/S2053229623006824

-† Denotes high school teacher co-author

50. Decato, D. A.; Sun J.; **Boller, M. R.†**; **Berryman, O. B.*** "Pushing the Limits of the Hydrogen Bond Enhanced Halogen Bond—the Case of the C-H Hydrogen Bond." *Chemical Science*, **2022**, *13*, 11156–11162. https://pubs.rsc.org/en/content/articlelanding/2022/SC/D2SC03792K

49. Riel, A. M. S.; Decato, D. A.; Sun J.; **Berryman, O. B.*** "Halogen Bonding Organocatalysis Enhanced Through Intramolecular Hydrogen Bonds." *Chemical Communications*, **2022**, *58*, 1378–1381. https://pubs.rsc.org/en/content/articlelanding/2022/CC/D1CC05475A

48. Lindbald, S.; Sethio, D.; **Berryman, O. B.*;** Erdélyi, M.* "Modulating Photoswitch Performance with Halogen, Coordinative and Hydrogen Bonding: A Comparison of Relative Bond Strengths." *Chemical Communications* **2021**, *57*, 6261-6263. https://pubs.rsc.org/en/content/articlelanding/2021/cc/d1cc01827b#!divAbstract

47. Decato, D. A.; Riel, A. M. S.; ***May J. H.†***; Bryantsev, V. S.; **Berryman, O. B.*** "Theoretical, Solid-State and Solution Quantification of the Hydrogen Bond Enhanced Halogen Bond." *Angewandte Chemie, International Edition* **2021**, *60*, 3685-3692. https://onlinelibrary.wiley.com/doi/full/10.1002/ange.202012262

-† Denotes undergraduate co-author

46. Turunen, L.; Németh, F. B.; Decato, D. A.; Pápai, P. I.; **Berryman, O. B.*;** Erdélyi, M.* "Halogen Bonds of Iodonium Ions: A World Dissimilar to Silver Coordination." *Bulletin of the Chemical Society of Japan* **2020**, *94*. 191-196. https://doi.org/10.1246/bcsj.20200274

45. John, E. A.**‡**; Massena, C. J.**‡**; **Berryman, O. B.*** "Helical Anion Foldamers in Solution." *Chemical Reviews* **2020**, *120*, 5, 2783-2810. https://doi.org/10.1021/acs.chemrev.9b00583

- ‡ Both authors contributed equally

44. Riel, A. M. S.; Huynh, H. T.; Jeannin, O.; Berryman, O. B.; Fourmigue, M.* "Organic Selenocyanates as Halide Receptors: From Chelation to One-Dimensional Systems." *Crystal Growth & Design* **2019**, 19, 1418-1425. https://doi.org/10.1021/acs.cgd.8b01864

43. Riel, A. M. S.; Jeannin, O.; Berryman, O. B.; Fourmigue, M.* "Co-crystals of an Organic Triselenocyanate with Ditopic Lewis Bases: Recurrent Chalcogen Bond Interactions Motifs." *Acta Crystallographica Section B* **2019**, *B75*, 34-38. https://doi.org/10.1107/S2052520618017778

42. Decato, D. A.; Riel, A. M. S.; **Berryman, O. B.*** "Anion Influence on the Packing of 1,3-Bis(4-Ethynyl-3-Iodopyridinium)-Benzene Halogen Bond Receptors." *Crystals* **2019**, *9*, 522-536. https://doi.org/10.3390/cryst9100522

41. Riel, A. M. S.; Rowe, R. K.; Ho, E. N.; Carlsson, A.-C. C.; Rappé, A. K.; **Berryman, O. B.***; Ho, P. S.* "Hydrogen Bond Enhanced Halogen Bonds: A Synergistic Interaction in Chemistry and Biochemistry." *Accounts of Chemical Research* **2019**, *52*, 2870–2880. https://doi.org/10.1021/acs.accounts.9b00189

40. Decato, D. A.; **Berryman, O. B.*** "Structural and Computational Characterization of a Bridging Zwitterionic-Amidoxime Uranyl Complex." *Organic Chemistry Frontiers*, **2019**, ***6***, 1038-1043, 2019. https://doi.org/10.1039/C9QO00267G

39. Massena, C. J., Decato, D. A., **Berryman, O. B.*** "A Long-Lived Halogen-Bonding Anion Triple Helicate Accomodates Rapid Guest Exchange." *Angewandte Chemie, International Edition*, **2018**, *57*, 16109-16113. https://doi.org/10.1002/anie.201810415

38. Riel, A. M. S.‡; Decato, D. A.‡; Sun J.; Massena, C. J.; ***Jessop, M. J.†***; **Berryman, O. B.*** "The Intramolecular Hydrogen Bonded–Halogen Bond: A New Strategy for Preorganization and Enhanced Binding." *Chemical Science*, **2018**, *9*, 5828–5836. https://doi.org/10.1039/C8SC01973H

-† *Denotes undergraduate co-author* ‡ Both authors contributed equally

37. Wageling, N. B.; Decato, D. A.; **Berryman, O. B.*** "Steric Effects of pH Switchable, Substituted (2-pyridinium)urea Organocatalysts: a Solution and Solid Phase Study." Supramolecular Chemistry, **2018**, *30*, 1004–1010. https://doi.org/10.1080/10610278.2015.1118101

36. Sun, J.; Riel A. M. S.; **Berryman, O. B. *** "Solvatochromism and Fluorescence Response of a Halogen Bonding Anion Receptor." *New Journal of Chemistry*, **2018**, *42*, 10489–10492. https://doi.org/10.1039/C8NJ00558C

- Invited contribution to thematic issue on halogen bonding

35. Riel, A. M. S.; ***Jessop, M. J.†***; Decato, D. A.; Massena, C. J.; Nascimento, V. R.†; **Berryman, O. B.*** "Experimental Investigation of Halogen-Bond Hard-Soft Acid Base Complementarity." *Acta Crystallographica Section B*, **2017**, *B73*, 203-209. https://doi.org/10.1107/S2052520617001809

- Invited contribution to thematic issue on halogen bonding -† *Denotes undergraduate co-author*

34. Massena, C. J.; Wageling, N. B.; Decato, D. A.; Rodriguez, E. M.†; **Berryman, O. B.*** "A Halogen Bond Induced Triple Helicate Encapsulates Iodide." *Angewandte Chemie International Edition* **2016**, *55*, 12398-12402. https://doi.org/10.1002/anie.201605440

- Cover art and UM press release, featured by NSF EPSCoR/IDeA Foundation, SciShow, Montana Associated Technology Rountables, Montanan Magazine, UM President's Report, UM We Are Montana tour, highlighted in Atlas of Science -† *Denotes undergraduate co-author*

33. Riel, A. M. S.; Decato, D. A.; **Berryman, O. B.*** "Protonation and Alkylation Induced Multidentate C–H•••Anion Binding to Perrhenate." *Crystal Growth and Design*, **2016**, *16*, 974-980. https://doi.org/10.1021/acs.cgd.5b01524

32. Wageling, N. B.‡; ***Neuhaus, G. F.‡†***; Rose, A. M.; Decato, D. A.; **Berryman, O. B.*** "Advantages of Organic Halogen Bonding for Halide Recognition." *Supramolecular Chemistry*, **2016**, *28, 665-672*. https://doi.org/10.1080/10610278.2015.1118101

-† *Denotes undergraduate co-author* ‡ Both authors contributed equally

31. Massena, C. J.; Riel, A. M. S.; Neuhaus, G. F.†; Decato, D. A.; **Berryman, O. B.*** "Solution and Solid-Phase Halogen and C-H Hydrogen Bonding to Perrhenate." *Chemical Communications*, **2015**, *51*, 1417-1420. https://doi.org/10.1039/C4CC09242B

-† *Denotes undergraduate co-author*

30. Decato, D. A.; **Berryman, O. B.*** "Crystal Structure of [1,1':3',1''-Terphenyl]-2',3,3''-Tricarboxylic Acid." *Acta Crystallographica Section E*, **2015**, *E71*, o667-o668. https://doi.org/10.1107/S2056989015015029

29. Tresca, B. W.; **Berryman, O. B.**; Zakharov, L. N.; Johnson, D. W.; Haley, M. M. "Anion-Directed Self-Assembly of a 2,6-bis(2-Anilinoethynyl)pyridine Bis(amide) scaffold." *Supramolecular Chemistry*, **2016**, *28,* 37-44. https://doi.org/10.1080/10610278.2015.1072199 (invited for special issue in honor of Jonathan L. Sessler)

28. **Berryman, O. B.**; Johnson, C. A.; Vonnegut, C. L.; Fajardo, K. A.; Zakharov, L. N.; Johnson, D. W.; Haley, M. M. "Solid-State Examination of Conformationally Diverse Sulfonamide Receptors Based on Bis(2-anilinoethynyl)pyridine, -Bipyridine, and -Thiophene." *Crystal Growth and Design*, **2015**, *15*, 1502-1511. https://doi.org/10.1021/cg5018856

27. Sather, A. C.; **Berryman, O. B.**; Rebek, J. Jr. "Selective Recognition and Extraction of the Uranyl Ion from Aqueous Solutions with a Recyclable Chelating Resin." *Chemical Science*, **2013**, *4*, 3601-3605. https://doi.org/10.1039/C3SC51507A

26. Sather, A. C.; **Berryman, O. B**.; Moore, C. E.; Rebek, J. Jr. "Uranyl Ion Coordination with Rigid Aromatic Carboxylates and Structural Characterization of their Complexes." *Chemical Communications*, **2013**, *49*, 6379-6381. https://doi.org/10.1039/C3CC43358G

25. Collins, M. S.; Carnes, M. E.; Sather, A. C.; **Berryman, O. B.**; Zakharov, L. N.; Teat, S. J.; Johnson, D. W. "Pnictogen-Directed Synthesis of Discrete Disulfide Macrocycles." *Chemical Communications*, **2013**, *49*, 6599-6601. https://doi.org/10.1039/C3CC43524E

24. Sather, A. C.; **Berryman, O. B.**; Rebek, J. Jr. "Synthesis of Fused Indazole Ring Systems and Application to Nigeglanine Hydrobromide." *Organic Letters*, **2012**, *14,* 1600-1603. https://doi.org/10.1021/ol300303s

23. **Berryman, O. B.**; Sather, A. C.; Lledo, A.; Rebek, J. Jr. "Switchable Catalysis with a Light Responsive Cavitand." *Angewandte Chemie International Edition*, **2011**, *50*, 9400-9403. https://doi.org/10.1002/anie.201105374

    - **Editor designated "hot paper"** for importance in a rapidly evolving field of high interest.

22. **Berryman, O. B.**; Sather, A. C.; Rebek, J. Jr. "A Deep Cavitand with a Fluorescent Wall Functions as an Ion Sensor." *Organic Letters*, **2011**, *13*, 5232-5235. https://doi.org/10.1021/ol2021127

21. **Berryman, O. B.**; Dube, H.; Rebek, J. Jr. "Photophysics Applied to Cavitands and Capsules." *Israel Journal of Chemistry*, **2011**, *51*, 700-709. https://doi.org/10.1002/ijch.201100055

    - **Invited review article**

20. Fontenot, S. A.; Cangelosi, V. M.; Pitt, M. A. W.; Sather, A. C.†; Zakharov, L. N.; **Berryman, O. B.**; Johnson, D. W. "Design, Synthesis and Characterization of Self-Assembled As_2L_3 and Sb_2L_3 Cryptands." *Dalton Transactions*, **2011**, *40*, 12125-12131. https://doi.org/10.1039/C1DT10817D

19. Gavette, J. V.; Lara, J.; **Berryman, O. B.**; Zakharov, L. N.; Haley, M. M.; Johnson, D. W. "Lithium Cation Enhances Anion Binding in a Tripodal Phosphine Oxide-Based Ditopic Receptor." *Chemical Communications*, **2011**, *47*, 7653-7655. https://doi.org/10.1039/C1DT10817D

18. Carroll, C. N.; Coombs, B. A.; McClintock, S. P.; Johnson, C. A.; **Berryman, O. B.**; Johnson, D. W.; Haley, M. M. "Anion-Dependent Fluorescence in Bis(anilinoethynyl)pyridine Derivatives: Switchable ON-OFF and OFF-ON responses." *Chemical Communications*, **2011**, *47*, 5539-5541. https://doi.org/10.1039/C1CC10947B

17. **Berryman, O. B.**; Sather, A. C.; Rebek, J. Jr. "A Light Controlled Cavitand Wall Regulates Guest Binding." *Chemical Communications,* **2011**, *47*, 656-658. https://doi.org/10.1039/C0CC03865B

16. Sather, A. C.; **Berryman, O. B.**; Ajami, D.; Rebek, J. Jr. "Reactivity of *N*-nitrosoamides in Confined Spaces." *Tetrahedron Letters,* **2011**, *52*, 2100-2103. http://doi.org/10.1016/j.tetlet.2010.11.030

15. Sather, A. C.; **Berryman, O. B.**; Rebek, J. Jr. "Selective Recognition and Extraction of the Uranyl Ion." *Journal of the American Chemical Society,* **2010**, *132*, 13572-13574. https://doi.org/10.1021/ja1035607

14. Beer, S.‡; **Berryman, O. B.‡**; Ajami, D.; Rebek, J. Jr. "Encapsulation of the Uranyl Dication." C*hemical Science*, **2010**, *1*, 43-47. https://doi.org/10.1039/C0SC00116C

    -***‡ Both authors contributed equally***. Highlighted in RSC press release, UK's Daily Telegraph, MSN news, Yahoo News and AOL news. Cover art.

13. Restorp, P.; **Berryman, O. B.**; Sather, A. C.; Ajami, D.; Rebek, J. Jr. *"*A Synthetic Receptor for Hydrogen Bonding to Fluorines of Trifluoroborates*." Chemical Communications,* **2009***,* 5692-5694*.* https://doi.org/10.1039/B914171E

12. Johnson, C. A.; **Berryman, O. B.**; Sather A. C.; Zakharov, L. N.; Haley, M. M.; Johnson, D. W. *"*Anion Binding Induces Helicity in a Hydrogen Bonding Receptor: Crystal Structure of a 2,6-Bis(anilinoethynyl)pyridinium Chloride*." Crystal Growth and Design,* **2009***, 9*, 4247-4249. https://doi.org/10.1021/cg900674p

11. **Berryman, O. B.**; Johnson, D. W. *"*Experimental Evidence of Interactions Between Anions and Electron-Deficient Aromatic Rings*." Chemical Communications,* **2009***,* 3143-3153. https://doi.org/10.1039/B823236A

    - **Invited feature article** and cover art.

10. Carroll, C. N.; **Berryman, O. B.**; Johnson, C. A.; Zakharov, L. N.; Haley, M. M.; Johnson, D. W. *"*Protonation Activates Anion Binding and Alters Binding Selectivity in New Inherently Fluorescent 2,6-bis(2-anilinoethynyl)pyridine Bisureas*." Chemical Communications,* **2009**, 2520-2522*.* https://doi.org/10.1039/B901643K

9. **Berryman, O. B.**; Sather, A. C.; Meisner, J. S.; Hay, B. P.; Johnson, D. W. *"*Solution Phase Measurement of Both Weak Sigma Complexes and C-H•••X^- Hydrogen Bonding Interactions in a Synthetic Receptor*." Journal of the American Chemical Society*, **2008***, 130,* 10895-10897. https://doi.org/10.1021/ja8035652

8. **Berryman, O. B.**; Johnson, C. A.; Zakharov, L. N.; Haley, M. M.; Johnson, D. W. *"*Water and Hydrogen Halides Serve the Same Structural Role in a Series of 2+2 Hydrogen-Bonded Dimers Based on 2,6-bis(2-anilinoethynyl)pyridine Sulfonamide Receptors*." Angewandte Chemie International Edition,* **2008***, 47*, 117-120. https://doi.org/10.1002/anie.200703971

7. Shultz, G. V.; **Berryman, O. B.**; Zakharov, L. N.; Tyler, D. R. *"*Preparation of Photodegradable Polymers Containing Metal-Metal Bonds Using ADMET*." Journal of Inorganic and Organometallic Polymers and Materials*, **2008***, 18,* 149-154. https://doi.org/10.1007/s10904-007-9174-8

6. **Berryman, O. B.**; Bryantsev, V. S.; Stay, D. P.; Johnson, D. W.; Hay, B. P. "Structural Criteria for the Design of Anion Receptors: the Interaction of Halides with Electron-Deficient Arenes." *Journal of the American Chemical Society*, **2007***, 129*, 48-58. https://doi.org/10.1021/ja063460m

    - UO Press release – December 2006, **cited 291 times**, Web of Science highly cited paper.

5. Meisner, J. S.; **Berryman, O. B.**; Zakharov, L. N.; Johnson, D. W. "Methyl 4-bromo-3,5-dinitrobenzoate." *Acta Crystallographica Section E,* **2007**, *63*, o2466. https://doi.org/10.1107/S1600536807017874

4. Cangelosi, V. A.; Sather, A. C.; Zakharov, L. N.; **Berryman, O. B.**; Johnson, D. W. "Diastereoselectivity in the Self-Assembly of $As_2L_2Cl_2$ Macrocycles is Directed by the As-π Interaction." *Inorganic Chemistry,* **2007***, 46*, 9278-9284*.* https://doi.org/10.1021/ic701290h

3. **Berryman, O. B.**; Hof, F.; Hynes, M. J.; Johnson, D. W. "Anion-π Interaction Augments Halide Binding in Solution." *Chemical Communications,* **2006**, 506-508. https://doi.org/10.1039/B511570A

2. Johnson, C. A.; Baker, B. A.; **Berryman, O. B.**; Zakharov, L. N.; O'Connor, M. J.; Haley, M. M. "Synthesis and Characterization of Pyridine- and Thiophene-Based Platinacyclyne." *Journal of Organometallic Chemistry,* **2006***, 691*, 413-421. http://doi.org/10.1016/j.jorganchem.2005.09.008

1. Vickaryous, W. J.; Healey, E. R.; **Berryman, O. B.**; Johnson, D. W. "Synthesis and Characterization of Two Isomeric, Self-Assembled Arsenic-Thiolate Macrocycles." *Inorganic Chemistry,* **2005**. *44*, 9247-9252. https://doi.org/10.1021/ic050954w

BOOK CHAPTERS

A. Decato, D. A.; John, E. A. **Berryman, O. B.***; "Halogen Bonding: An Introduction." In: Huber, S. M., Ed Halogen Bonding in Solution; Wiley-VCH Publishers. **2021**, vol. 1, pp 1-41. https://doi.org/10.1002/9783527825738.ch1

B. Riel, A. M. S.; Wageling, N. B.; Decato, D. A.; **Berryman, O. B.*** "Anion-Arene Interactions and the Anion-π Phenomenon." In: Atwood, J. L., (ed.) Comprehensive Supramolecular Chemistry II, **2017**, vol. 1, pp. 149-184. Oxford: Elsevier. https://doi.org/10.1016/B978-0-12-409547-2.12484-9

C. Decato, D. A.; **Berryman, O. B.***; "Simultaneous Halogen and Hydrogen Bonding to Carbonyl and Thiocarbonyl Functionality" in Aspects of Multi-component Crystals: Synthesis, Concepts and Function, **2018**, vol. 1, pp272-288. Tiekink, E. R. T., Eds; De Gruyter Publishers. https://doi.org/10.1515/9783110464955-012

D. Rather Healey, E.; Vickaryous, W. J.; **Berryman, O. B.**; Johnson, D. W. *"*Self-Assembled Supramolecular Main Group Coordination Complexes" in BOTTOM-UP NANOFABRICATION: Supramolecules, Self-Assemblies, and Organized Films*." Ariga, K., Nalwa, H. S., Eds.; American Scientific Publishers: Stevenson Ranch,* **2007**.

PATENTS

I. **Berryman, O. B.**; Palmer Christopher; "Stationary Phase Chromatography Methods and Compounds." Filed February 7, 2022. Application No. 63307258.

II. Lohrman, J.; Riel A. M. S.; Decato, D. A.; Haley, M.; Johnson, D. W.; **Berryman, O. B.**; "Fluorescent Halogen Bonding Arylethynyl Scaffolds for Anion Recognition." filed May 1, **2019**. U.S. Patent No. 16/401,037.

III. **Berryman, O. B.**; Massena, C. J. "A Halogen-Bond-Induced Triple Helicate Encapsulates Iodide." Serial No. 62/362,226, filed July 14, **2016**.

IV. Haley, M. M.; Johnson, D. W.; **Berryman, O. B.**; Johnson, C. A.; Stimpson, C. A. *"*Process for Preparation of Tunable Phenylacetylene Host Compounds for Ligand Binding.*"* U.S. Pat. Appl. US 2008167472, **2008**, 21.

V. Rebek, J. Jr.; **Berryman, O. B.**; Sather, A. C. "Methods and Compositions for Chelating Metals in Aqueous Solutions." US Pat. Application # 61/217,078, **2009**.

RESEARCH EXPERIENCE

University of Montana, Missoula, Montana – **Assistant, Associate and Full Professor** **2012 – pres.**

Halogen and Hydrogen Bonding Organocatalysts, foldamers and anion receptors
Organic synthesis, characterization, single crystal X-ray diffraction, kinetics.

Self-Assembled Ligands for Uranium
Organic synthesis, characterization, self-assembly, single crystal X-ray diffraction, HPLC, LC-MS.

The Scripps Research Institute, La Jolla, California – **Advisor: Julius Rebek Jr.** **2008 – 2012**

Synthesis of neglanine hydrobromide – methods development for fused indazoliums
Organic synthesis, characterization, optimization, single crystal X-ray diffraction.

Light controlled catalysis of the Knoevenagel condensation
Organic synthesis, characterization, kinetics, photochemistry, UV-Vis/fluorescence, 2D NMR, ITC.

Tripodal receptors to probe weak B–F hydrogen bonds
Organic synthesis, characterization, equilibria studies.

Encapsulating uranium – carboxylate ligands and water extraction
Organic and inorganic synthesis, characterization, single crystal X-ray diffraction, extraction studies, ICP metal analysis.

University of Oregon, Eugene – **Advisor: Darren W. Johnson** **2003 – 2008**

New hydrogen bonding scaffolds for the recognition of small molecules
Organic synthesis, binding studies, X-ray diffraction.

Physical organic studies – the interaction of anions with electron-deficient aromatics
Organic synthesis, characterization, equilibria studies – WinEQNMR, Hunter software and DynaFit, crystallography, computational chemistry.

Probing guest interactions in arsenic – thiolate capsules
Inorganic synthesis, single crystal X-ray diffraction.

University of New Hampshire, Durham **2001 – 2003**

Synthesis of extended aromatics – towards controlled nanotube synthesis
Organic synthesis, characterization (NMR, IR, UV-vis, Mass spectrometry)

CONFERENCES

TALKS

Berryman, O. B. "The Role of Hydrogen Bonds and Halogen Bonds in the Assembly of Anion Binding Higher-Order Helices." Invited Seminar at Eastern Washington University, Cheney, WA, April 25th, **2024 –** invited talk

Berryman, O. B. "The Role of Charge and the Hydrogen Bond Enhanced Halogen Bond in the Assembly of Anion Binding Higher-Order Helicates." Invited Seminar at the Aqueous Supramolecular Chemistry Workshop, Bozeman, MT, July 26th, **2023 –** invited talk

Berryman, O. B. "Halogen Bonding Catalysis Improved with Intramolecular Hydrogen Bonds." Abstracts of Papers, ACS Regional NORM Meeting, Bozeman, MT, June 29th, **2023** – invited talk

Berryman, O. B. "A New Strategy to Preorganize Molecular Structure and Enhance Binding: The Hydrogen Bond Enhanced Halogen Bond." Invited Seminar at Baylor University, Waco, TX, April 14th, **2023** – invited talk

Berryman, O. B. "Molecules that Coil: Using Noncovalent Interactions to Control Self-Assembly." CBSD Invited Seminar at University of Montana, Missoula, MT, December 5th, **2022** – invited talk

Berryman, O. B.; John, E. J.; Riel, A. M. S.; Massena, C. J.; Decato, D. A. "Anion Induced Assembly of Aromatic Foldamers Decorated with Hydrogen and Halogen Bonds." Abstracts of Papers, 5th International Symposium on Halogen Bonding, Chiba, Japan, November 7th, **2022** – invited talk

Berryman, O. B. "Fundamentals of Halogen Bonding in Aqueous Systems and their Application in Aromatic Foldamers." Invited Seminar at the Aqueous Supramolecular Chemistry Workshop, Bozeman, MT, July 18th, **2022 –** invited talk

Berryman, O. B.; "Controlling the Assembly of Anion Helicates with Hydrogen and Halogen Bonds." Abstracts of Papers, International Symposium on Macrocyclic and Supramolecular Chemistry, Eugene, Oregon, June 21st, **2022** – invited talk

Berryman, O. B. "Aromatic Foldamers Decorated with Hydrogen and Halogen Bonds." Invited Seminar at the 3rd Workshop on Aromatic Foldamers, Leeds, UK, April 22nd, **2022 –** invited talk

Berryman, O. B.; "New Strategy to Preorganize Molecular Structure and Enhance Binding: The Hydrogen Bond Enhanced Halogen Bond." Abstracts of Papers, Pacifichem, Honolulu, HI (Virtual), December 19th, **2021** – invited talk

Berryman, O. B.; "Self-Assembly and Characterization of Anion Binding Triple Helicates and Foldamers from Halogen Bonding Oligomers." Abstracts of Papers, Pacifichem, Honolulu, HI (Virtual), December 18th, **2021** – invited talk

Berryman, O. B.; John, E. J.; Riel, A. M. S.; Massena, C. J.; Decato, D. A. "Conformational Control with Halogen and Hydrogen Bonds." Abstracts of Papers, 4th International Symposium on Halogen Bonding, Stellenbosch, South Africa (Virtual), November 15th, **2020** – invited talk

Berryman, O. B. "Towards Sequence Controlled Synthetic Anion Channels: Long Oligomers Decorated with Halogen and Hydrogen Bonds." Abstracts of Papers, The Center for Biomolecular Structure and Dynamics, 9th annual CoBRE Research Retreat, Missoula, MT, United States, September 9th, **2020** – invited talk

Berryman, O. B. "Towards Sequence Controlled Synthetic Anion Channels: Long Oligomers Decorated with Halogen and Hydrogen Bonds (and How to Sabbatical During a Pandemic)." CBSD Invited Seminar at University of Montana, Missoula, MT, July 6th, **2020** – invited talk

Berryman, O. B. "Halogen Bonding: Catalysts, Receptors and Helicates, Oh My." Invited Seminar at Uppsala University, Uppsala, Sweden, March 13, **2020** – invited talk

Berryman, O. B. "Solution Self-Assembly and Characterization of Anion Binding Triple Helicates from Halogen Bonding Oligomers" Invited Seminar at Ruhr-Universität Bochum, Bochum, Germany, February 27, **2020** – invited talk

Berryman, O. B. "Halogen Bonding: A New Paradigm for Preorganization and Self-Assembly." Abstracts of Papers, 35th Norwegian Organic Chemistry Winter Meeting, Skeikampen, Norway, January 9-12, **2020** – invited talk

Berryman, O. B. "Conformational Control with Hydrogen and Halogen Bonds." Invited Seminar at University of Idaho, Moscow, ID, November 5th, **2019** – invited talk

Berryman, O. B. "Conformational Control with Hydrogen and Halogen Bonds." Invited Seminar at Julius Rebek Jr. Symposium, Shanghai, China, October 18th, **2019** – invited talk

Berryman, O. B. "Small Molecule X-ray Diffraction." Abstracts of Papers, The Center for Biomolecular Structure and Dynamics, 8th annual CoBRE Research Retreat, Missoula, MT, United States, September 13th, **2019** – invited talk

Berryman, O. B.; "Anion Triple Helicates: Self-Assembly Directed by Halogen Bonding." Abstracts of Papers, 14th International Symposium on Macrocyclic and Supramolecular Chemistry, Lecce, Italy, June 3rd, **2019** – invited talk

Berryman, O. B. "Anion Triple Helicates: Self-Assembly Directed by Halogen Bonding." Invited Seminar at Montana State University, Bozeman, MT, March 15th, **2019** – invited talk

Berryman, O. B. "Engineering Tiny Holes: Developing Molecules that Move Anions Inside of Cells." Abstracts of Papers, Montana University System Research Road Show, Missoula, Montana, October 24th, **2018**

Berryman, O. B. "Can Halogen Bonding Molecules Function as Anion Carriers and Channels?" CBSD Invited Seminar at University of Montana, Missoula, MT, July 2nd, **2018** – invited talk

Berryman, O. B.; Massena, C. J.; Riel, A. M. S.; Wageling, N. B.; Decato, D. A. "Halogen Bonding: A New Paradigm for Preorganization and Self-Assembly." Abstracts of Papers, 3rd International Symposium on Halogen Bonding, Greenville, South Carolina, June 10-14th, **2018**

Berryman, O. B. "Small Molecule X-ray Diffraction at University of Montana." Abstracts of Papers, The Center for Biomolecular Structure and Dynamics, 7th annual CoBRE Research Retreat, Missoula, MT, United States, September 7th, **2018** – invited talk

Berryman, O. B. "Halogen Bonding Strategies for Catalysis and Supramolecular Assembly." Invited Seminar at University of Oregon, Eugene, OR, October 6th, **2017** – invited talk

Berryman, O. B. "Halogen Bonding Strategies for Catalysis and Supramolecular Assembly." Invited Seminar at University of Montana, Missoula, MT, March 14th, **2017** – invited talk

Berryman, O. B. "Halogen Bonding Strategies for the Assembly of Supramolecular Materials." MUS Materials Science Annual Meeting, Bozeman, MT, October 14th, **2016** – invited talk

Berryman, O. B. "A Halogen Bond Induced Triple Helicate Encapsulates Iodide." Abstracts of Papers, The Center for Biomolecular Structure and Dynamics, 5th annual CoBRE Research Retreat, Missoula, MT, United States, June 1st, **2016** – invited talk

Berryman, O. B. "A Halogen Bond Induced Triple Helicate Encapsulates Iodide." Abstracts of Papers, 2nd International Symposium on Halogen Bonding, Gothenburg, Sweden, June 6-10th, **2016 – *Rising Star honorarium***

Berryman, O. B.; Massena, C. J.; Riel, A. M. S.; Decato, D. A. "A Halogen Bond Induced Triple Helicate Encapsulates Iodide." Invited Seminar at Eastern Washington University, Cheney, WA, United States, April 28th, **2016** – invited talk

Berryman, O. B. **"**Halogen Bonding as a Strategy for Higher Order Assembly." Abstracts of Papers, Pacifichem, Honolulu, HI, United States, December 15-20th, **2015** – invited talk

Berryman, O. B.; Riel, A. M. S.; Massena, C. J.; Neuhaus, G. F.; Wageling, N. B.; Decato, D. A. "Fundamental Studies of Bidentate Halogen Bond Donors for Supramolecular Catalysis." Invited Seminar at University of Wisconsin, Eau Claire, Eau Claire, WI, United States, October 16th, **2015** – invited talk

Berryman, O. B. "Synthetic Hydrogen and Halogen Bonding Oxyanion Holes." Abstracts of Papers, The Center for Biomolecular Structure and Dynamics, 4th annual CoBRE Research Retreat, Seeley Lake, MT, United States, September 13th, **2015** – invited talk

Berryman, O. B.; Riel, A. M. S.; Massena, C. J.; Neuhaus, G. F.; Wageling, N. B.; Decato, D. A. "Fundamental Studies of Bidentate Halogen Bond Donors for Supramolecular Catalysis." Invited Seminar at University of New Hampshire, Durham, NH, United States, June 29th, **2015** – invited talk

Berryman, O. B.; Riel, A. M. S.; Massena, C. J.; Neuhaus, G. F.; Wageling, N. B.; Decato, D. A. "Fundamental Studies of Bidentate Halogen Bond Donors for Supramolecular Catalysis." Invited Seminar at Washington State University, Pullman, WA, United States, March 2nd, **2015** – invited talk

Berryman, O. B.; Riel, A. M. S.; Massena, C. J.; Neuhaus, G. F.; Wageling, N. B.; Decato, D. A. "Synthesis, X-ray Structure and Preliminary Anion Binding Studies of Bis-Ethynyl Pyridinium Halogen Bonding Organocatalysts." Abstracts of Papers, The Center for Biomolecular Structure and Dynamics, 3rd annual CoBRE Research Retreat, Seeley Lake, MT, United States, September 6th, **2014** – invited talk

Berryman, O. B. "Developing New Organocatalysts: Halogen Bonds in Action" Abstracts of Papers, ACS NORM Meeting, Helena, MT, United States, June 22-25th, **2014** – Invited talk

Berryman, O. B. "Developing New Organocatalysts: Halogen Bonds in Action" Abstracts of Papers, Montana ACS Spring Meeting, Helena, MT, United States, April 12th, **2014** – Invited talk

Berryman, O. B. "CoBRE Update: Halogen Bonding Scaffolds." CBSD Invited Seminar at University of Montana, Missoula, MT, February 6th, **2014** – invited talk

Berryman, O. B. "Incorporating Halogen Bonding Interactions for Catalysis." Abstracts of Papers, The Center for Biomolecular Structure and Dynamics, 2nd annual CoBRE Research Retreat, Seeley Lake, MT, United States, August 18th, **2013** – invited talk

Berryman, O. B. "Catalysis with Noncovalent Interactions." Abstracts of Papers, The Center for Biomolecular Structure and Dynamics, 1st annual CoBRE Research Retreat, Seeley Lake, MT, United States, September 8th, **2012** – invited talk

Berryman, O. B.; Sather A. C.; Rebek, J. Jr. "Supramolecular Catalysis with a Light Responsive Cavitand." Abstracts of Papers, 243rd ACS National Meeting, San Diego, CA, United States, March 27th **2012**.

Berryman, O. B.; Sather, A. C.; Rebek, J. Jr. **"**Light Controlled Guest Binding in a Deep Cavitand." Abstracts of Papers, Pacifichem, Honolulu, HI, United States, December 15th, **2010**.

Berryman, O. B.; Beer, S.; Sather, A. C.; Rebek, J. Jr. **"**Encapsulation of the Uranyl Dication." Abstracts of Papers, Pacifichem, Honolulu, HI, United States, December 16th, **2010**.

Berryman, O. B.; Beer, S.; Sather, A. C.; Rebek, J. Jr. "Encapsulating the Uranyl Dication." Abstracts of Papers, TSRI Research Symposium, La Jolla, CA, United States, September 30th, **2010**.

Berryman, O. B.; Sather, A. C.; Rebek, J. Jr. **"**Light Controlled Guest Binding in a Deep Cavitand." Abstracts of Papers, 240th ACS National Meeting, Boston, MA, United States, August 25th, **2010**.

Berryman, O. B.; Beer, S.; Sather, A. C.; Rebek, J. Jr. **"**Encapsulation of the Uranyl Dication." Abstracts of Papers, 240th ACS National Meeting, Boston, MA, United States, August 25th, **2010**.

INVITED - Berryman, O. B.; Johnson, C. A.; Haley, M. M.; Johnson, D. W. "Guest-Induced Helical Dimerization of a Diverse Series of Hydrogen Bonding Receptors." Abstracts of Papers, MSI retreat, Gleneden Beach, Oregon, United States, December, 12-14th, **2006**.

Berryman, O. B.; Stay, D. P.; Johnson, D. W.; Bryantsev, V. S.; Hay, B. P. **"**Structural Criteria for the Design of Anion Receptors: Incorporating the Anion-π Interaction." Abstracts of Papers, 232nd ACS National Meeting, San Francisco, CA, United States, September 10-14th, **2006**.

POSTERS

Berryman, O. B.; Massena, C. J.; Riel, A. M. S.; Wageling, N. B.; Decato, D. A. "Halogen Bonding: A New Paradigm for the Self-Assembly of Higher-Order Anion Helicates." Abstracts of Papers, 13th International Symposium on Macrocyclic and Supramolecular Chemistry, Quebec City, Canada, July 8-13th, **2018**

Berryman, O. B.; Massena, C. J.; Riel, A. M.; Wageling, N. B.; Neuhaus, G. F.; Decato, D. A. **"**Fundamental Studies of Bidentate Halogen Bond Donors for Supramolecular Catalysis." Abstracts of Papers, Gordon Research Conference on Physical Organic Chemistry, Holderness, NH, United States, June 21-26th, **2015**.

Berryman, O. B.; Restorp, P.; Sather, A. C.; Rebek, J. Jr. **"**A Synthetic Receptor for Hydrogen-bonding to Fluorines of Trifluoroborates." Abstracts of Papers, Pacifichem, Honolulu, HI, United States, December 19th, **2010**.

Berryman, O. B.; Johnson, C. A.; Haley, M. M; Johnson, D. W. "Dimerization of a Hydrogen-Bonded 2,6-alkynylpyridyl Scaffold is Induced by Both Water and Anions." Abstracts of Papers, MSI retreat, Gleneden Beach, Oregon, United States, December, 11-13th, **2007**.

Berryman, O. B.; Meisner, J. S.; Stay, D. S.; Johnson, D. W.; Bryantsev, V. S.; Hay, B. P. "Structural Criteria for the Design of Anion Receptors; Incorporating the Anion-π Interaction." Abstracts of Papers, ISMSC International Meeting, Salice Terme, Italy, June 24-28th, **2007**.

Berryman, O. B.; Johnson, C. A.; Haley, M. M.; Johnson, D. W. "Dimerization of a Hydrogen-Bonded 2,6-alkynylpyridyl Scaffold is Induced by Both Water and Anions." Abstracts of Papers, ISMSC International Meeting, Salice Terme, Italy, June 24-28th, **2007**.

Berryman, O. B.; Stay, D. P.; Johnson, D. W.; Bryantsev, V. S.; Hay, B. P. "Structural Criteria for the Design of Anion Receptors; Incorporating the Anion-π Interaction." Abstracts of Papers, ISMSC International Meeting, Victoria, B.C. Canada, June 25-30th, **2006**.

Berryman, O. B.; Stay, D. P.; Johnson, D. W.; Bryantsev, V. S.; Hay, B. P. "Structural Criteria for the Design of Anion Receptors; Incorporating the Anion- π Interaction." Abstracts of Papers, Oregon Academy of Science Annual Meeting, Eugene, Oregon United States, February 26th, **2006**.

TEACHING EXPERIENCE

University of Montana

High School Students and teachers **2012 – pres.**

John Bower (Project SEED, 2016), Berit Blank, Michael Janke (Sentinel HS teacher), Leo Westenfelder

Undergraduates Mentored **2012 – pres.**

Neal Whaley, Erin McMahon, Geoffrey Glidewell, Alek Hierro, George Neuhaus, Casey Massena, Julia Allred, Christian McCurrdy, Hue Vu, Taymee Brandon, Evan McManigal, Alex Johnson, Ana Martin, Vinicius Nascimento, Morly Jessup, Christopher Grubb, Enrique Rodriguez, James May, Jacob Fromm, Curtis Williamson (Blackfeet community college), Heather Wiegert, Dylan Budke, Logan Robinette, McKenna Wendt, Madeleine Boller, Emily Carroll, Claire Woody, Novik Thomas, Erik Lundbeck, Katie Munro, Melia McSherry, Eliot Woods, Kenzington Mann (Joseph Knudsen, Claire Broling, Isabel Hammond)

Graduate Students **2012 – pres.**

Nick Wageling, Ariana Rose, Asia Riel, Daniel Decato, Casey Massena, Jiyu Sun, Eric John, Seth Helsley, Fahmida Hossain

Courses **2012 – pres.**

CHMY 697 Research
CHMY 690 Research
CHMY 630 Department Seminar
CHMY 599 Thesis
CHMY 597 Research
CHMY 595 Physical Organic Chemistry
CHMY 580 Supramolecular Research Survey
CHMY 562 Organic Structure and Mechanism
CHMY 499 Senior Thesis
CHMY 492 Independent Study
CHMY 490 Undergraduate Research
CHMY 411 Advanced Organic Chemistry
CHMY 292 Independent Study
CHMY 222 Organic Chemistry I lab
CHMY 223 Organic Chemistry II
CHMY 224 Organic Chemistry II lab

University of Oregon, Eugene

Students mentored **2004 – pres.**

A. C. Sather, J. S. Meisner, C. Ward, S. Rodriguez-Azirez

Laboratory teaching assistant – masters polymer internship course **2006 – 2007**

Course development, syllabus, responsible for laboratory preparation, cleanup and student safety

Laboratory teaching assistant – general Chemistry **2003**

Developed syllabus and weekly lecture, taught practical skills, responsible for student safety

Laboratory teaching assistant – organic chemistry **2003**

Developed syllabus and weekly lecture, taught practical skills, responsible for student safety

INTERNSHIP

Pacific Northwest National Laboratory **Fall/winter 2005**
Supervisor – Dr. Benjamin P. Hay
Computational chemistry.

COLLABORATORS

Prof. Fraser Hof, University of Victoria — DFT calculations for anion/arene complexes
Profs. Darren W. Johnson and Michael M. Haley, University of Oregon — phenyl acetylene systems
Prof. Mate Erdélyi, Uppsala University – iodonium chemistry and photoswitches
Dr. Vyacheslav Bryantsev, Oak Ridge National Laboratory – quantum calculations

MEMBERSHIPS/OUTREACH/INSTITUTIONAL INVOLVEMENT

Referee for (172+ reviews total) *Nature*, *Angewandte Chemie, Journal of Organic Chemistry, Journal of the American Chemical Society, European Journal of Organic Chemistry, Chemical Communications, Dalton Transactions, Inorganic Chemistry, New Journal of Chemistry, RSC Advances, European Journal of Inorganic Chemistry, SIEPP, Chemistry A European Journal, Chemistry an Asian Journal, Journal of Materials Chemistry C, Journal of Materials Chemistry A, Analytical Chemistry, CrystEngComm, Journal of Solution Chemistry, Journal of Chemistry, Journal of Inclusion Phenomenon and Macrocyclic Chemistry, American Chemical Science Journal, Acta Crystallographica Section B, IUCrJ, Crystal Growth & Design, ChemPlusChem, ACS Catalysis* **2011 – pres.**
Graduate Recruitment Committee, Chair **2023 – pres.**
UM Undergraduate Journal Advisory Committee **2023 – pres.**
ACS NORM symposium organizer “Bringing Molecules Together: Noncovalent Interactions” **2023**
Chemistry demonstrations for Hellgate & Townsend 6th grade classes (70 students) **2023**
Reviewer for NSF – CHE division grants, panelist **2023**
Reviewer for ACS – ND grant program **2023**
Reviewer for University of Tennessee grant program **2023**
Reviewer for NSF – CHE division grants **2022**
Reviewer for Montana INBRE program **2022**
Reviewer for ACS – ND grant program (2x) **2022**
Chemistry demonstrations for Sentinel HS AP science class (20 students) **2022**
Reviewer for NSF – CHE division grants **2021**
Reviewer for ACS – ND grant program **2021**
Laboratory Outreach Experience, Uppsala University (approx. 30 Junior high students) **2020**
Reviewer for NSF – CHE division grants **2020**
Reviewer for the Kansas State Cancer Center **2020**
Faculty Evaluation Committee **2020 – 2022**
Lead Faculty Development Workshop on running a successful research lab – UM **2018**
Reviewer for NSF – CHE division grants (2x) **2019**
Reviewer for the French National Research Agency **2019**
Faculty Advisor for the University of Montana Nordic Ski Club **2018**
Reviewer for NSF – CHE division grants **2018**
Reviewer for Murdock grant program **2018**
Reviewer for ACS – ND grant program **2018**
Reviewer for Murdock Charitable Trust **2018**
Reviewer for Montana INBRE program **2018**

Volunteer for We are Montana (3×, 34+ 8th graders)	**2017**
Reviewer for NSF – CHE division grants, panelist	**2017**
Question Reviewer for ORAU National Science Bowl	**2017**
Faculty Senate, University of Montana, member	**2016 – pres.**
Volunteer at spectrUM "building with biology" day	**2016**
Reviewer for NSF – MRI grant program	**2016**
Reviewer for NSF – CHE division grants	**2016**
Tribal college faculty rotation host for six faculty	**2016**
Big Sky high school job shadow for five students	**2016 – pres.**
UM Bioinorganic faculty search committee	**2015**
UM Materials Science faculty search committee	**2015**
Reviewer for ACS – DNI grant program	**2015**
Chemistry demonstrations for spectrUM science museum (**424+ reached**)	**2012 – pres.**
ACS NORM 2014 symposium organizer "Small Forces Mountanous Outcomes"	**2014**
Unit Standards Review Committee member	**2013**
Graduate Recruitment Committee, Chair	**2012 – 2016**
NORM X-ray diffraction workshop organizer, Missoula, MT	**2014**
X-ray tutorial organizer UM	**2014**
Canadian Chemical Crystallography Workshop	**2014**
Organic and Crystallographer Faculty Search Committee (UO)	**2006**
Nano Quest Challenge 2006 – Judge	**2006**
University of Oregon Department Crystallographer	**2005**
American Chemical Society	**2004 – pres.**
Golden Key National Honour Society	**1999 – pres.**

STUDENT AWARDS

Eric John – ISXB4 Travel Bursary Award	**2020**
Eric John – Montana ACS Char Elect	**2019**
Daniel Decato – Travel Grant ACA as well as Conf. on Noncovalent Interactions	**2019**
Daniel Decato – Bertha Morton Award	**2018**
Daniel Decato – Besancon Scholarship	**2018**
Casey Massena – Bertha Morton Scholarship	**2017**
Casey Massena – International finalist for 67th Lindau Nobel Laureate Chemistry Meeting	**2017**
Asia Riel – Chateaubriand Fellowship – International study in France	**2017**
Asia Riel – Rennes Métropole – International study in France	**2017**
Asia Riel – ACS Division of Organic Chemistry Travel Grant Spring ACS Meeting	**2017**
Asia Riel – UM Research and Creative Scholarship Travel Grant Spring ACS Meeting	**2017**
Morly Jessop – President's Recognition award	**2017**
James May – Dick Field Physical Chemistry award	**2017**
James May – General Chemistry award	**2017**
James May – William P. Cahill Memorial Scholarship	**2017**
Asia Riel – Lola Walsh Anacker Scholarship	**2016**
Dan Decato – Stanley R. Ames Scholarship	**2016**
Casey Massena – Besancon Scholarship	**2016 – 2017**
Casey Massena – Stanley R. Ames Scholarship	**2016**

Evan McManigal – General Chemistry Achievement Award	**2016**
Morly Jessup – Louis F. Kinney Award	**2016**
Chris Grubb – Richard H. Jesse Memorial Scholarship	**2016**
James May – 1st place undergraduate poster award, SD undergraduate research symposium	**2016**
Morly Jessup – General Chemistry Achievement Award	**2015**
Asia Riel – Bertha Morton Scholarship	**2015**
Nicholas Wageling – CBSD Graduate Research Fellowship	**AY 2014 – 15**
George Neuhaus – Watkins Scholarship	**AY 2013 – 15**
George Neuhaus – Lewis F. Kinney Award	**2014**
Geoffrey Glidewell – Physical Chemistry award	**2014**
George Neuhaus – UMCUR award for best poster presentation	**2013**
George Neuhaus – Richard H. Jesse Scholarship	**2013**
Neal Whaley – Fessenden Organic Student award	**2013**
Casey Massena – Chemistry alumni faculty award	**2013**

REFERENCES

Available upon request