Braden M. Weight

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Education

2020–Present **Doctor of Philosophy in Physics (Expected: Spring 2025)**,
University of Rochester, Rochester, NY.

2020–2022 **Master of Science in Physics**,
University of Rochester, Rochester, NY.

2018–2020 **Master of Science in Physics**,
North Dakota State University, Fargo, ND.

2014–2018 **Bachelor of Science in Physics,**
Bachelor of Science in Chemistry,
North Dakota State University, Fargo, ND.

Research Interests

Light-Matter Interactions: Polaritonic chemistry has become the leading direction to control a multitude of processes, such as charge transfer, selective bond breaking, and excited state dynamics. An exciton-polariton is an entangled state of light and matter in which the native electronic and photonic quantum states hybridize to form new states. These new states can be tuned in various ways to modify and produce unique chemical and physical properties such as potential energy landscapes or the electronic density distributions of molecules and materials.

Quantum Dynamics: The versatility and increasing general interest of nanotechnology is without bound and is of great importance to the world. Studying the time-dependence of these many-body systems is challenging and requires the development of new and efficient methods that give accuracy between the expensive wavepacket methods (AIMS, MCTDH, MC-Ehrenfest, etc.) and the mixed quantum-classical Ehrenfest method.

Electronic Structure: Electronic properties of materials is a vast and ever-growing realm of research. My ambitions in this field are far-reaching from molecules to materials. Depending on the chemical system, I employ a wide range of approaches such as quantum Monte Carlo, coupled cluster, density functional, and semi-empirical/tight-binding theories.

Honors and Awards

2023 Zerner Graduate Student Award, *62th Sanibel Symposium: Quantum Theory Project*, St. Augustine Beach, FL
Success Rate: ∼2/50 graduate students $300 Award

2018 1st Place Award at the *58th Annual Sanibel Symposium: Quantum Theory Project* in the undergraduate poster competition, St. Simons Island, GA
Success Rate: ∼1/25 undergraduate students

2017 4th place in *NDSU EXPLORE* for the poster competition, Fargo, ND

2017 North Dakota State University Physics Achievement Award, Fargo, ND
Success Rate: ∼1/50 students $100 Award

2016 1st place award in *Solving Real World Problems: Graduate Research Exposition - Interdisciplinary Celebration of Research* for best undergraduate presentation, Fargo, ND
Success Rate: 1/100 undergraduate students $100 Award

2015–2018 James Sigihara Scholarship for academic excellence, North Dakota State University, Fargo, ND
$100 Award / Semester

2014-2018 Undergraduate Dean's List

Research Experience

2020–Present **Graduate Research Assistant**, *Dr. P. Huo*, University of Rochester.
Cavity Quantum Electrodynamics for Molecular and Material Simulation,
- Developed computational methods and tools to examine the ground and excited states of hybrid electron-photon-nuclear systems using time-dependent density functional theory (TD-DFT)
  Publications: *JACS* 2024; *PRA* 2024; *PRB* 2024; *JPCL* 2023; *Chem. Rev.* 2023; *ChemRxiv* May 2024; *ChemRxiv* Oct. 2024
  Software Development: Ab Initio Polaritons

2022–Present Summer GRA
Graduate Research Assistant, *Dr. Y. Zhang / Dr. S. Tretiak*, Los Alamos National Laboratory.
Ab initio Cavity Quantum Electrodynamics for Molecular and Material Simulation,
- Formulated novel quantum chemistry approaches (QED-Hartree-Fock, QED-coupled cluster, QED-quantum Monte Carlo) toward the simulation of *ab initio* polaritonic properties
  Publications: *PRA* 2024; *PCCP Perspective* 2023
  Software Development: OpenMS

2020–Present
Graduate Research Assistant, *Dr. P. Huo*, University of Rochester.
Ab initio Nonadiabatic Simulations of Photochemistry,
- Implemented/benchmarked various state-of-the-art mixed quantum-classical dynamics approaches, *e.g.*, linearized and partially linearized spin-mapping (spin-LSC, spin-PLDM), symmetric quasi-classical (SQC)
  Publications: *JCP* 2021; *JCP* 2022; *ChemRxiv* May 2024; *ChemRxiv* Oct. 2024
  Software Development: Semiclassical Quantum Dynamics (SQD), SHARC-SQC

2018–2022 Summer GRA
Undergraduate/Graduate Research Assistant, *Dr. S. Tretiak / Dr. B. Gifford / Dr. S. Kilina*, Los Alamos National Laboratory / North Dakota State University.
Ab initio Simulations of Low-dimensional Nanomaterials,
- Collaborated with experimental colleagues (Dr. Steve Doorn, Dr. Han Htoon, Dr. Ming Zheng) in calculations of nuclear and electronic spectroscopies of carbon nanotubes
  Publications: *JPCL* 2023; *ACS Nano* 2023; *RSC Appl. Interfaces* 2024; *Nat. Commun.* 2022; *JPCL* 2022; *JPCL* 2021; *JPCC* 2021; *ACS Nano* 2020; *Nano Lett.* 2019; JPCC 2019

Teaching Experience

2022–Present
Course Development – *Introduction to Computational Quantum Mechanics*, Rochester, NY.
- Composed high-level course curriculum, including syllabus, lecture notes/codes, homeworks/solutions.
- Covered topics include: Python programming, Numerical Calculus, and Quantum/Classical Dynamics
- **Freely available course materials** with notes and many example Python codes: Course Website

2018–Present
Research Mentor, *North Dakota State University / University of Rochester*, Fargo, ND / Rochester, NY.
One-on-one Instruction
- Mentored five undergraduate/graduate students
- Fostered critical thinking, data presentation, and writing skills
- The most recent article stemming from such mentoring: Mentor Article

2020–2021
Teaching Assistant – Physics, *University of Rochester*, Rochester, NY.
Full-Class Instruction
- Facilitated undergraduate physics-based laboratories
- Coordinated distanced learning

2018–2020
Teaching Assistant – Physics, *North Dakota State University*, Fargo, ND.
Full-Class Instruction
- Facilitated undergraduate physics-based laboratories

2018–2020
High School Substitute Teacher, *Fargo Public Schools*, Fargo, ND.
Full-Class Instruction
- Certified K-12 license granted by the Education Standards and Practices Board
- Applied communication skills to interact with audiences of varying ages

2015–2016
Personal Tutor, *Self-Employed*, Fargo, ND.
One-on-one Tutoring by Appointment,
- Tutored honors chemistry and physics

2015
Academic Tutor, *ACE Tutoring Center, North Dakota State University*, Fargo, ND.
One-on-one and Group Academic Tutoring,
- Tutored mathematics, chemistry, physics, anthropology, and English

Skills and Software Familiarity

Algorithms: Time-propagation (Classical: Velocity-Verlet, Runge-Kutta; Quantum: diagonalization, split operator, Chebyshev, Crank-Nicholson), self-consistent field techniques, numerical optimization (*e.g.*, Newton-Raphson)

Technical Writing: Aided in the composition of and subsequent production of deliverables of various open-science proposals, including NSF CHE-2124398, NSF CHE-2244683, and NSF OAC-2311442 as well as AFOSR FA9550-23-1-0438

Languages: Python, Linux, LaTeX, Mathematica, FORTRAN77/95JAVA, C, C++

Packages: Gaussian, SHARC, VASP, MultiWFN, Q-CHEM, LAMMPS, TINKER, VMD, VESTA, DFTB+, CP2K, Grimme-xTB

Plotting: Origin, Excel, Python/Matplotlib, MATLAB, GNUPLOT

Computing: Extensive experience in high-performance computing, local clusters as well as national centers (e.g., NERSC)

Reviewing Responsibilities

ACS Nano – American Chemical Society
ACS In Focus – American Chemical Society

Volunteer Work

2019–2020 **Vice President (and Acting President) of Graduate Physics Association**, Performed administrative duties commensurate to running a graduate organization, which supports physics students to attend conferences and promotes various outreach activities, North Dakota State University, Fargo, ND.
60 Hours

2019 **North Dakota Science Olympiad Event Official**, Coordinated and administered the "Sounds of Music" event, which included writing and grading tests as well as adjudicating home-made instruments, Fargo, ND.
20 Hours

2016–2022 **Physics Outreach Events**, Physics demos for various activities including elementary schools, community fairs, and other various events , Fargo, ND.
30 Hours

Publications – h-index: 12/10, Total Citations: 349/228, (Google Scholar / Web Of Science)

October 2024 *23.* **Braden M. Weight*** and Pengfei Huo.* *Ab Initio* Approaches to Simulate Molecular Polaritons: Properties and Quantum Dynamics. University of Rochester, Rochester, NY.
ChemRxiv, 2024, DOI: 10.26434/chemrxiv-2024-72ghz **Citations: 0/0**

May 2024 *22.* **Braden M. Weight**,* Daniel J. Weix,* Zachary Tonzetich, Todd D. Krauss, and Pengfei Huo.* Cavity Quantum Electrodynamics Enables para- and ortho- Bromination of Nitrobenzene. University of Rochester, Rochester, NY.
IF: 14.4 *J. Am. Chem. Soc.*, 2024, 146, 23, 16184–16193 **Citations: 3/2**

May 2024 *21.* **Braden M. Weight*** and Pengfei Huo.* *Ab initio* on-the-fly simulations of photochemistry using spin-mapping non-adiabatic dynamics. University of Rochester, Rochester, NY.
ChemRxiv, 2024, DOI: 10.26434/chemrxiv-2024-4hzlj **Citations: 1/1**

April 2024 *20.* Jialong Wang, **Braden M. Weight**,* and Pengfei Huo.* Quantum Electrodynamic Vacuum Fluctuations Influence Chemical Selectivity: A Benchmark and Chemical Explanation. University of Rochester, Rochester, NY.
ChemRxiv, 2024, DOI: 10.26434/chemrxiv-2024-6xsr6-v2 **Citations: 1/1**

March 2024 *19.* Michael A.D. Taylor,* **Braden M. Weight**,* and Pengfei Huo.* Reciprocal Asymptotically Decoupled Hamiltonian for Cavity Quantum Electrodynamics. University of Rochester, Rochester, NY.
IF: 3.9 *Physical Review B*, 109, 104305 (2024) **Citations: 1/0**

March 2024 *18.* **Braden M. Weight***, Sergei Tretiak, and Yu Zhang.* A Diffusion Quantum Monte Carlo Approach to the Polaritonic Ground State. Los Alamos National Laboratory, Los Alamos, NM.
IF: 3.0 *Physical Review A*, 109, 032804 (2024) **Citations: 15/2**

Nov. 2023 *17.* **Braden M. Weight**, Brendan J. Gifford*, Grace Tiffany, Elva Henderson, Deyan Mihaylov, Dmitri Kilin, and Svetlana Kilina.* Optically Active Defects in Carbon Nanotubes via Chlorination: Computational Insights. University of Rochester, Rochester, NY.
IF: TBD *RSC Applied Interfaces*, 2024, 1, 281–300 **Citations: 0/0**

Sept. 2023 **Front Cover** *16.* **Braden M. Weight**, Xinyang Li, and Yu Zhang.* Theory and Modeling of Light-matter Interactions in Chemistry: Current and Future. Los Alamos National Laboratory, Los Alamos, NM. **Invited by *Physical Chemistry Chemical Physics*** to contribute a **perspective** article on light-matter interactions in chemistry.
IF: 2.9 *Physical Chemistry Chemical Physics*, 2023, 25, 31554-31577 **Citations: 15/10**

July 2023 **Supp. Cover** *15.* Arkajit Mandal,*† Michael A.D. Taylor,† **Braden M. Weight**,† Eric R. Koessler,† Xinyang Li, and Pengfei Huo.* Theoretical Advances in Polariton Chemistry and Molecular Cavity Quantum Electrodynamics. University of Rochester, Rochester, NY. **Invited by *Chemical Reviews*** as part of a special issue on polariton chemistry
IF: 51.4 *Chemical Reviews* 2023, 123, 16, 9786–9879 **Citations: 112/63**

June 2023 *14.* **Braden M. Weight**,* Todd D. Krauss, and Pengfei Huo.* Investigating Molecular Exciton Polaritons Using Ab Initio Cavity Quantum Electrodynamics. University of Rochester, Rochester, NY.
IF: 5.7 *Journal of Physical Chemistry Letters* 2023, 14, 25, 5901–5913 **Citations: 24/15**

March 2023 *13.* **Braden M. Weight***, Andrew Sifain, Brendan J. Gifford, Han Htoon, and Sergei Tretiak.* On-the-fly Non-adiabatic Dynamics Simulations of Single-Walled Carbon Nanotubes with Covalent Defects. Los Alamos National Laboratory, Los Alamos, NM.
IF: 15.8 *ACS Nano* 2023, 17, 7, 6208–6219 **Citations: 5/3**

* Corresponding author
† Authors contributed equally

Jan. 2023 *12.* **Braden M. Weight**, Ming Zheng, and Sergei Tretiak.* Signatures of Chemical Dopants in Simulated Resonance Raman Spectroscopy of Carbon Nanotubes. Los Alamos National Laboratory, Los Alamos, NM.
IF: 5.7 *Journal of Physical Chemistry Letters*, 2023, 14, 5, 1182–1191 **Citations: 15/11**

Nov. 2022 *11.* Deping Hu,* Arkajit Mandal, **Braden M. Weight**, Pengfei Huo.* Quasi-Diabatic Propagation Scheme for Simulating Polariton Chemistry. University of Rochester, Rochester, NY.
IF: 4.4 *Journal of Chemical Physics*, 157, 194109 (2022) **Citations: 16/11**

August 2022 *10.* Yu Zheng, Yulun Han, **Braden M. Weight**, Zhiwei Lin, Brendan J. Gifford, Ming Zheng, Dmitri Kilin, Svetlana Kilina, Stephen K. Doorn, Han Htoon, and Sergei Tretiak. Photochemical spin-state control of binding configuration for tailoring organic color center emission in carbon nanotubes. Los Alamos National Laboratory, NM.
IF: 14.7 *Nature Communications* 13, 4439 (2022) **Citations: 13/10**

June 2022 *9.* Shahriar N. Khan, **Braden M. Weight**, Brendan J. Gifford, Sergei Tretiak,* and Alan Bishop.* Impact of Graphene Quantum Dot Edge Morphologies on Their Optical Properties. Los Alamos National Laboratory, NM.
IF: 5.7 *Journal of Physical Chemistry Letters* 2022, 13, 25, 5801–5807 **Citations: 6/6**

August 2021 *8.* **Braden M. Weight**, Arkajit Mandal, and Pengfei Huo.* *Ab initio* symmetric quasi-classical approach to investigate molecular Tully models. University of Rochester, Rochester, NY.
IF: 4.4 *Journal of Chemical Physics* 155, 084106 (2021) **Citations: 17/13**

August 2021 *7.* **Braden M. Weight**, Andrew E. Sifain, Brendan J. Gifford, Dmitri Kilin, Svetlana Kilina, and Sergei Tretiak.* Coupling between Emissive Defects on Carbon Nanotubes: Modeling Insights. Los Alamos National Laboratory, NM.
IF: 5.7 *Journal of Physical Chemistry Letters* 2021, 12, 32, 7846–7853 **Citations: 11/9**

Feb. 2021 *6.* **Braden M. Weight**, Brendan J. Gifford, Sergei Tretiak, and Svetlana Kilina.* Interplay between Electrostatic Properties of Molecular Adducts and Their Positions at Carbon Nanotubes. Los Alamos National Laboratory, NM.
IF: 3.7 *Journal of Physical Chemistry C* 2021, 125, 8, 4785–4793 **Citations: 12/9**

Jan. 2021 *5.* Yu Zheng,* **Braden M. Weight**, Andrew C. Jones, Vigneshwaran Chandrasekaran, Brendan J. Gifford, Sergei Tretiak, Stephen K. Doorn, Han Htoon.* Photoluminescence Dynamics Defined by Exciton Trapping Potential of Coupled Defect-States in DNA-Functionalized Carbon Nanotubes. Los Alamos National Laboratory, NM.
IF: 15.8 *ACS Nano* 2021, 15, 1, 923–933 **Citations: 18/13**

Feb. 2020 *4.* Younghee Kim, Serguie V. Goupalov, **Braden M. Weight**, Brendan J. Gifford, Xiaowei He, Avishek Saha, Mijin Kim, Geyou Ao, YuHuang Wang, Ming Zheng, Sergei Tretiak, Stephen K. Doorn,* Han Htoon.* Hidden Fine Structure of Quantum Defects Revealed by Single Carbon Nanotube Magneto-Photoluminescence. Los Alamos National Laboratory, NM.
IF: 15.8 *ACS Nano* 2020, 14, 3, 3451–3460 **Citations: 16/13**

Nov. 2019 *3.* Brendan J. Gifford, Avishek Saha, **Braden M. Weight**, Xiaowei He, Geyou Ao, Ming Zheng, Han Htoon, Svetlana Kilina, Stephen K. Doorn,* and Sergei Tretiak.* Mod(n-m,3) Dependence of Defect-State Emission Bands in Aryl Functionalized Carbon Nanotubes. Dept. of Physics, North Dakota State University. Los Alamos National Laboratory, NM.
IF: 10.8 *Nano Letters* 2019, 19, 12, 8503-8509 **Citations: 26/21**

August 2019 *2.* Brendan J. Gifford, **Braden M. Weight**, and Svetlana Kilina.* Interplay between Conjugated Backbone Units and Side Alkyl Groups in Chirality Sensitive Interactions of Single Walled Carbon Nanotubes with Polyfluorenes, Dept. of Physics, North Dakota State University.
IF: 3.7 *Journal of Physical Chemistry C* **123** (40), 2019, 24807-24817 **Citations: 5/4**

March 2018 *1.* **Braden M. Weight** and Alan R. Denton,* Structure and Stability of Charged Colloid-Nanoparticle Mixtures. Dept. of Physics, North Dakota State University.
IF: 4.4 *Journal of Chemical Physics* **148** (11), 2018, 114904 **Citations: 17/13**

Presentations

June 18, 2024 *34.* **Braden M. Weight**, Daniel J. Weix, Zachary J. Tonzetich, Todd D. Krauss, and Pengfei Huo, Cavity Quantum Electrodynamics Enables *para*- and *ortho*-Selective Electrophilic Bromination of Nitrobenzene, American Conference on Theoretical Chemistry (ACTC), Poster, University of North Carolina at Chapel Hill, NC.

Mar. 6, 2024 *33.* **Braden M. Weight**, Sergei Tretiak, and Yu Zhang, A Diffusion Quantum Monte Carlo Approach to the Polaritonic Ground State, APS March Meeting, **Talk**, Las Vegas, NV.

Feb. 27, 2024 *32.* **Braden M. Weight** and Pengfei Huo, Electrodynamics in the Chebyshev Basis for a Macroscopic Number of Molecules, 63^{th} Annual Sanibel Symposium, Poster, St. Augustine Beach, FL.

Aug. 18, 2023 *31.* **Braden M. Weight**, Sergei Tretiak, and Yu Zhang, A Diffusion Quantum Monte Carlo Approach to the Polaritonic Ground State, LANL Lightning Talk, **Talk**, Los Alamos, NM.

Mar. 23, 2023 *30.* **Braden M. Weight**, Todd D. Krauss, and Pengfei Huo, Investigating Molecular Exciton-Polaritons using Many-body Electronic Structure Theory with Cavity Quantum Electrodynamics, APS March Meeting, **Talk**, Las Vegas, NV.

Feb. 14, 2023 *29.* **Braden M. Weight**, Todd D. Krauss, Pengfei Huo, Investigating Molecular Exciton-Polaritons using Many-body Electronic Structure Theory with Cavity Quantum Electrodynamics, 62^{th} Annual Sanibel Symposium, Poster, St. Augustine Beach, FL.

Oct. 13, 2022 *28.* **Braden M. Weight** and Pengfei Huo, Properties of Molecular Exciton-Polaritons from Simple *ab Initio* Cavity Quantum Electrodynamics Calculations, NDSU Department of Chemistry Seminar, **Invited Talk**, Fargo, ND.

Oct. 5, 2022 *27.* **Braden M. Weight** and Pengfei Huo, Interfacial Charge Transfer in Rhodamine-based Dye-sensitized TiO2 Quantum Dots with *Ab Initio* Non-adiabatic Excited State Dynamics Simulations, ACS North Eastern Regional Meeting (NERM), **Talk**, Rochester, NY.

Oct. 4, 2022 *26.* **Braden M. Weight** and Pengfei Huo, Properties of Molecular Exciton-Polaritons from Simple *ab Initio* Cavity Quantum Electrodynamics Calculations, ACS North Eastern Regional Meeting (NERM), **Talk**, Rochester, NY.

June. 2, 2022 *25.* **Braden M. Weight** and Pengfei Huo, Properties of Molecular Exciton-Polaritons: Coupling *Ab Initio* Calculations with Quantum Optics, ACS Middle Atlantic Regional Meeting (MARM), Poster, Trenton, NJ.

Mar. 23, 2022 *24.* **Braden M. Weight** and Pengfei Huo, Properties of Molecular Exciton-Polaritons: Coupling *Ab Initio* Calculations with Quantum Optics, Graduate Research Symposium, Poster, Rochester, NY.

Mar. 14, 2022 *23.* **Braden M. Weight** and Pengfei Huo, On-the-fly Exploration of Recent Spin-mapping Non-adiabatic Frameworks, Invited Speaker Department of Chemistry Poster Session, Poster, Rochester, NY .

Oct. 21, 2021 *22.* **Braden M. Weight**, Andrew E. Sifain, Brendan J. Gifford, Han Htoon, and Sergei Tretiak, Non-adiabatic Dynamics Simulations of Single-Walled Carbon Nanotubes with Topological sp3-defects: An On-the-fly NEXMD Study, Fall 2021 Bi-Annual Industrial Associates Symposium, Poster, Rochester, NY.

Sep. 30, 2021 *21.* **Braden M. Weight**, Andrew E. Sifain, Brendan J. Gifford, Han Htoon, and Sergei Tretiak, Non-adiabatic Dynamics Simulations of Single-Walled Carbon Nanotubes with Topological sp^3-defects: An On-the-fly NEXMD Study, Virtual International Seminar on Theoretical Advancements (VISTA), **Invited Talk**, Rochester, NY.

April 17, 2020 *20.* **Braden M. Weight**, Andrew E. Sifain, Brendan J. Gifford, Dmitri Kilin, Svetlana Kilina, Sergei Tretiak, and Andrei Kryjevski, Inspection of Excited State Properties in Defected Carbon Nanotubes from Multiple Exciton Generation to Defect-defect Interactions, NDSU Master of Science Thesis Defense, **Talk**, Fargo, ND.

Oct. 14, 2019 *19.* **Braden M. Weight**, Andrew E. Sifain, Brendan J. Gifford, Dmitri Kilin, Svetlana Kilina, Sergei Tretiak, Interacting Pairs of Surface Defects on Carbon Nanotubes, NDSU Physics Symposium, **Talk**, Fargo, ND.

Aug. 7, 2019 *18.* **Braden M. Weight**, Andrew E. Sifain, Brendan J. Gifford, Dmitri Kilin, Svetlana Kilina, Sergei Tretiak, Interacting Pairs of Surface Defects on Carbon Nanotubes, Student Symposium, Poster, Los Alamos, NM.

June 4, 2018 *17.* **Braden M. Weight**, Brendan J. Gifford, Sergei Tretiak, Svetlana Kilina, Covalent Functionalization of Single-Walled Carbon Nanotubes: Exploring Electronegativity and Steric Effects, Excited State Processes in Electronic and Bio Nanomaterials, Poster, Santa Fe, NM.

Mar. 8 2018 *16.* **Braden M. Weight** and Svetlana Kilina, Covalent and non-Covalent Functionalization of Single-Walled Carbon Nanotubes: A MD/DFT Study, APS March Meeting, Poster, Los Angeles, CA.

Mar. 6 2018 *15.* **Braden M. Weight** and Alan R. Denton, Swelling and Structural Properties of Polymer Microgels: Simulations of a Coarse-Grained Model, APS March Meeting, **Talk**, Los Angeles, CA.

Feb. 21 2018 *14.* **Braden M. Weight** and Svetlana Kilina, Covalent Functionalization of Single-Walled Carbon Nanotubes, 58^{th} Annual Sanibel Symposium, Poster, St. Simons Island, GA.

July 28 2017 *13.* **Braden M. Weight** and Juana Moreno, Deformation of Single Crystal NiAl and Ni_3Al: A Molecular Dynamics Study, REU Exposition, Poster, Baton Rouge, LA.

July 21 2017 *12.* **Braden M. Weight** and Juana Moreno, Deformation of Single Crystal NiAl and Ni_3Al: A Molecular Dynamics Study, CIMM Symposium, Poster, Baton Rouge, LA.

July 19 2017 *11.* **Braden M. Weight** and Juana Moreno, Deformation of Single Crystal NiAl and Ni_3Al: A Molecular Dynamics Study, CIMM Symposium: Graduate Student Retreat, **Invited Talk**, New Orleans, LA.

Nov. 2 2017 *10.* **Braden M. Weight** and Alan R. Denton, Structure and Stability of Colloid-Nanoparticle Suspensions, NDSU Explore Exposition, Poster, Fargo, ND.

Nov. 2 2017 *9.* **Braden M. Weight** and Svetlana Kilina, Mixing of Covalent and non-Covalent Functionalization of Carbon Nanotubes, NDSU Explore Exposition, Poster, Fargo, ND.

Apr. 28 2017 *8.* **Braden M. Weight** and Alan R. Denton, Structure and Stability of Colloid-Nanoparticle Suspensions, 2017 Red River Valley Physics & Astrophysics Undergraduate Research Symposium, Poster, Grand Forks, ND.

Apr. 28 2017 *7.* **Braden M. Weight** and Svetlana Kilina, Non-covalent Functionalization of Carbon Nanotubes: Controlling Chirality Selectivity via Alkyl Groups of Conjugated Co-Polymers, 2017 Red River Valley Physics & Astrophysics Undergraduate Research Symposium, Poster, Grand Forks, ND.

Mar. 18 2017 *6.* **Braden M. Weight** and Alan R. Denton, Structure and Stability of Colloid-Nanoparticle Suspensions, APS March Meeting, **Talk**, New Orleans, LA.

Mar. 17 2017 *5.* **Braden M. Weight** and Svetlana Kilina, Non-covalent Functionalization of Carbon Nanotubes: Controlling Chirality Selectivity via Alkyl Groups of Conjugated Co-Polymers, APS March Meeting, Poster, New Orleans, LA.

Feb. 22 2017 *4.* **Braden M. Weight** and Svetlana Kilina, Non-covalent Functionalization of carbon Nanotubes: Controlling Chirality Selectivity via Alkyl Groups of Conjugated Co-Polymers, 57^{th} Annual Sanibel Symposium, Poster, St. Simons Island, GA.

Dec. 15 2016 *3.* **Braden M. Weight** and Svetlana Kilina, Non-covalent Functionalization of Carbon Nanotubes: A Study on Binding Energy of Various Branching Positions in Alkyl Groups of Conjugated Co-Polymers, Solving Real-World Problems: An Interdisciplinary Celebration of Research, Poster, Fargo, ND.

Nov. 2 2016 *2.* **Braden M. Weight** and Svetlana Kilina, Non-covalent Functionalization of Carbon Nanotubes by Conjugated Co-polymers, NDSU Explore Exposition, Poster, Fargo, ND.

Apr. 28 2016 *1.* **Braden M. Weight** and Alan R. Denton, Structure and Stability of Colloid-Nanoparticle Suspensions, 2016 Red River Valley Physics & Astrophysics Undergraduate Research Symposium, Poster, Fargo, ND.

References

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