

Badih A. Assaf
Franck M. Freimann Assistant Professor
Department of Physics, University of Notre Dame
335 Nieuwland Science Center
Notre Dame IN, 46556
+15746310671
bassaf@nd.edu

Education

Postdoc (Physics) Ecole Normale Supérieure. Département de Physique. 2014-2018.

PhD. (Physics) Northeastern University. 2009-2014

MSc. (Physics) Northeastern University. 2009-2012

BSc. (Major: Physics, Minor: Mathematics). American University of Beirut. 2006-2009

Appointments

Assistant Professor, Department of Physics, University of Notre Dame. 2018 -

Post-doctoral Junior Research Chair Fellow, Ecole Normale Supérieure. 2014-2018

Visiting Scientist. Madhavan group, Department of Physics, Boston College. Summer 2014

Visiting Scientist. Moodera group, Francis Bitter Magnet Lab, MIT. 2012-2014

Funding and awards

Current: NSF-DMR. 1905277 (Lead PI with Dobrowolska, Furdyna and Liu as co-PIs). Electron spin effects in semiconductor nanostructures: topology and magnetism. \$590,000

Current: IUCRC Center for Quantum Technology. (Co-PI, with Peter Kogge as PI). USD 20,000

Pending: CRDF US-Ukraine collaborative projects. (PI with O. Yastrubchak as Ukraine PI) Band structure engineering of complex magnetic III-V semiconductors for photovoltaic and spintronic applications. \$15,000

Concluded: NDnano seed grant 2019 (co-PI with D. Burghoff as PI and X. Liu as co-PI). USD 70,000

Award: Junior Research Chair Fellowship under ANR-Labex – while at Ecole Normal Supérieure. EUR \$100,000.

Declined.

NSF-DMREF-2020. (Lead PI with Eskildsen, Hsu and Halperin). Constructing topological superconductors via layer-by-layer symmetry engineering. \$1,798,232

NSF-CAREER. Quantum phase engineering in topological crystalline insulators. \$718,177

NSF-Enabling Quantum Leap Q-AMASE-i. (co-PI with Hinkle as PI) Foundry for a Semiconductor Quantum Network (NETWORQ). \$24,986,163

Memberships

American Physics Society, Materials Research Society

Reviewer

Physical Review Letters, Physical Review (X, B, Materials, Applied), Nature Communications, NPJ Quantum Materials, NPG Asia Materials, 2D Materials, Europhysics Letters, Journal of Applied Physics, Applied Physics Letters, Physica Status Solidi B.

Panelist and grant reviewer

- Panelist and ad hoc reviewer. 2021 – NSF Division of Materials Research
- Reviewer. 2021 Agence National de la Recherche proposal cycle (France)
- Ad hoc reviewer. 2020 – NSF Division of Materials Research
- Panelist. 2019 – NSF Electrical, Communications and Cyber Systems
- Reviewer. 2019 Agence National de la Recherche proposal cycle (France)

Publications

@ undergraduate, # graduate, \$ postdoctoral researcher, % senior personnel, * corresponding author

2022

1. S.-K. Bac,^{\$} K. Koller,[@] F. Lux,[#] J. Wang,[#] L. Riney,[#] K. Borisiak,[@] W. Powers,[@] M. Zhukovskyi,[%] T. Orlova,[%] M. Dobrowolska,[%] J.K. Furdyna,[%] Y. Mokrousov,[%] R.J. McQueeney,[%] O. Heinonen,[%] X. Liu,[%] B.A. Assaf.^{%,*} Topological response of the anomalous Hall effect through the spin-flop transition of MnBi₂Te₄. npj Quantum Materials 7 46 (2022) [citations= 1, IF=7.41]. arxiv:2103.15801.
2. Logan Riney,[#] Joaquin Bermejo-Ortiz,[#] Gauthier Krizman,^{\$} Seul-Ki Bac,^{\$} Jiashu Wang,[#] Maksym Zhukovskyi,[%] Tatyana Orlova,[%] Louis Anne de Vaultier,[%] Yves Guldner,[%] Roland Winkler,[%] Jacek K. Furdyna,[%] Xinyu Liu,[%] Badih A. Assaf.^{%,*} Fermi level tuning and band alignment in Mn doped InAs/GaSb arXiv:2111.14985 (2021). Phys. Rev. B 105 125301 (2022). [citations=0, IF=4.036]
3. G. Krizman,^{%,*} B. A. Assaf,[%] M. Orlita,[%] G. Bauer,[%] G. Springholz,[%] R. Ferreira,[%] L. A. de Vaultier,[%] and Y. Guldner,[%] “Interaction between interface and massive states in multivalley topological heterostructures”. Phys. Rev. Research 4 013179 (2022)
4. Ying Wang,[#] X. Liu,[%] S.K. Bac,^{\$} J.K. Furdyna,[%] B.A. Assaf,[%] M. Zhukovskyi,[%] T. Orlova,[%] Neil Dilley,[%] Leonid P. Rokhinson.^{%,*} Epitaxial growth and magnetic characterization of EuSe thin film with various crystalline orientations.” Journal of Applied Physics 131 055302 (2022). My group’s contribution: Provided materials for this work synthesized using the Notre Dame molecular beam epitaxy cluster. The manuscript discusses the synthesis of a magnetic proximity effect device that can resolve a controversial result where it was show that Dirac states enhance the critical temperature of ferromagnets.

5. J. Wang,^{#,*} W. Powers,[@] Z. Zhang,[%] B.J. McIntosh,[@] S.K. Bac,^{\$} L. Riney,[#] M. Zhukovskyi,[%] T. Orlova,[%] X. Liu,[%] B.A. Assaf.^{%,*} Observation of Coexisting weak localization and superconducting fluctuations in strain Sn_{1-x}In_xTe thin films. *Nanoletters*. 22 792 (2022) [citations= 0, IF=11.189]
6. M.Y. Toriyama,^{%,*} M.K. Brod,^{\$} L.C. Gomes, F. A. Bipasha,[%] B.A. Assaf,[%] E. Ertekin[%] and G.J. Snyder[%]. “Tuning valley degeneracy with band inversion”. *J. Mater. Chem. A*, 10 1588 (2022). [citations=0, IF=12.732] My group’s contribution: Contributed to theoretical modelling of this work, specifically, the k.p formalism used. The manuscript discusses how the Fermi surface of IV VI materials can be altered to potentially enhance their thermoelectric efficiency.

2021

7. X. Liu,^{%,*} Sining Dong,^{\$} Logan Riney,[#], Jiashu Wang,[#], Yong-Lei Wang,[%] Ren-Kui Zheng, Seul-Ki Bac,^{\$} Jacek Kossut,[%] Margaret Dobrowolska,[%] Badih A. Assaf,[%] and Jacek K. Furdyna.[%] “Crossover behavior of the anomalous Hall effect in Ga_{1-x}Mn_xAs_{1-y}Py across the metal-insulator transition” *Phys. Rev. B* 103, 214437 (2021). [citations=0, IF=4.036] My group’s contribution: Carried out electrical measurements at high magnetic field. They were essential in identifying the role of Coulomb interactions in the anomalous Hall effect in the insulating regime of these materials.
8. X. Liu,[%] J. Wang,[#], L. Riney,[#], S.K. Bac,^{\$} D.J. Smith, M.R. McCartney, I. Khan, A.J. Hoffman, M. Dobrowolska,[%] J.K. Furdyna,[%] B.A. Assaf.^{%,*} “Unraveling the structural and electronic properties of the strained PbSe on GaAs ” *Journal of Crystal Growth* 570 126235 (2021). [citations=0, IF=1.797]
9. S.-K. Bac,^{%,*} S. Lee,[%] X. Liu,[%] M. Dobrowolska,[%] B.A. Assaf,[%] J.K. Furdyna.[%] Magnetic Anisotropy of ferromagnetic Ga_{1-x}Mn_xAs_{1-y}Py with graded composition. *Phys. Rev. Materials* 5 054414 (2021) [citations=0, IF=3.989] My group’s contribution: Provided input into the analysis and supported recent supplementary measurements that were needed for a revision. The materials grown for this work enable a coupling between spin and charge relevant for memory devices.
10. G. Krizman,^{%,*} B. A. Assaf,[%] G. Bauer,[%] G. Springholz,[%] L. A. de Vulchier,[%] and Y. Guldner.[%] “Miniband engineering and topological phase transitions in topological-insulator–normal-insulator superlattices” *Phys. Rev. B* 103, 235302 (2021) [citations: 0, IF: 4.036] My group’s contribution: conceived this project during my postdoc and assisted in writing later on.
11. L. Riney,[#] C. Bunker,[@] S.-K. Bac,^{\$} J. Wang,[#], D. Battaglia,[#] Y.-C. Park,[%] M. Dobrowolska,[%] J.K. Furdyna,[%] X. Liu,[%] B.A. Assaf.^{%,*} “Introduction of Sr into Bi₂Se₃ thin films by molecular beam epitaxy”. *Journal of Applied Physics* 129 085105 (2021). arxiv:2011.12755 [citations=0, IF=2.389]

2020

12. J. Wang,[#] X. Liu,[%] C. Bunker,[@] L. Riney,[#] B. Qing,[@] S.K. Bac,^{\$} M. Zhukovskiy,^{\$} T. Orlova,[%] S. Rouvimov,[%] M. Dobrowolska,[%] J.K. Furdyna,[%] B.A. Assaf,^{%,*} "Weak antilocalization beyond the fully diffusive regime in Pb_{1-x}Sn_xSe topological quantum wells." *Phys. Rev. B* 102 155307 (2020). arxiv 2010.02294 [citations: 0, IF: 4.036]
13. S. Dong,^{\$} L. Riney,[#] X. Liu,^{%,*} L. Guo, R.-K. Zheng, X. Li, S.K. Bac,^{\$} J. Kossut,[%] M. Dobrowolska,[%] B.A. Assaf,[%] and J.K. Furdyna,[%] "Carrier localization in quaternary (Ga,Mn)(As,P) ferromagnetic semiconductor films." *Phys. Rev. Mater.* 5 014402 (2020) [citations: 1, IF: 3.989] My group's contribution: Provided input into analysis and interpretation and carried out electrical measurements at high magnetic field. The paper ties the emergence of magnetism in semiconductors to the presence of mobile charge carriers.
14. M.E. Jamer,^{%,*} B. Wilfong,^{\$} V.D. Buchelnikov, V.V. Sokolovskiy, O.N. Miroshkina, M.A. Zagrebin, D.R. Baigutlin, J.Naphy,[%] B.A. Assaf,[%] L.H. Lewis,[%] A. Pulkkinen,[%] B. Barbiellini,[%] A. Bansil,[%] and D. Heiman,[%] "Superconducting and antiferromagnetic properties of dual-phase V₃Ga". *Appl. Phys. Lett.* 117 062401 (2020) [citations=3, IF=3.596] Provided analysis input and suggested to study the superconductivity of the magnetic material V₃Ga under a new light.

2019

15. G. Krizman,^{#,*} T. Schumann,^{\$} S. Tchoumakov,^{\$} B.A. Assaf,[%] S. Stemmer,[%] L.A. de Vaulchier,[%] Y. Guldner,[%] "Determination of the crystal field splitting energy in Cd₃As₂ using magnetooptics". *Phys. Rev. B.* **100** 155205 (2019). [citations= 6, IF= 4.036].
16. A. Inhofer,^{\$} T. Wilde,[@] J. Duffy,[@] M. Boukhicha,[%] J. Palomo,[%] K. Watanabe,[%] T. Taniguchi,[%] J.-M. Berroir,[%] G. Fève,[%] E. Bocquillon,[%] B. Plaçais,[%] B.A. Assaf,^{%,*} "RF compressibility of topological surface and interface states in metal-hBN-Bi₂Se₃ capacitors". *Journal of Physics: Materials*, 2 044003 (2019) Focus Issue: Topological Matter [citations= 1, IF=N/A]

2018

17. G. Krizman,[#] B.A. Assaf,^{%,*} T. Phuphachong,[#] G. Bauer,[%] G. Springholz,[%] L.A. de Vaulchier,[%] Y. Guldner,[%] "Dirac parameters and topological phase transition of Pb_{1-x}Sn_xSe from magneto-spectroscopy" *Phys. Rev. B.* **98** 245202 (2018) arxiv 1810.10490 [citations= 19, IF= 4.036]
18. G. Krizman,[#] B.A. Assaf,^{%,*} M. Orlita,[%] T. Phuphachong,[#] G. Bauer,[%] G. Springholz,[%] G. Bastard,[%] R. Ferreira,[%] L.A. de Vaulchier,[%] Y. Guldner,[%] "Avoided level crossing at the magnetic field induced topological phase transition due to orbital mixing" *Phys. Rev. B.* **98** 161202 (2018). arxiv 1808.03361. **Editors' Suggestion.** [citations= 7, IF= 4.036]
19. P. M. Hosseinpour,^{#,*} F. Jiménez-Villacorta,[%] J. Liu, B.A. Assaf,[%] I.J. McDonald,[#] D. Arena,[%] D. Heiman,[%] L. Menon,[%] and L.H. Lewis,[%] "Fe-incorporated TiO₂nanotube arrays: Electronic structure and magnetic response" *Phys. Rev. B* **98** 195145 (2018) [citations= 0, IF= 4.036]

20. G. Krizman,[#] B.A. Assaf,^{%,*} T. Phuphachong,[#] G. Bauer,[%] G. Springholz,[%] G. Bastard, R. Ferreira, L.A. de Vaultier, Y. Guldner. "Tunable Dirac interface states in topological superlattices" *Phys. Rev. B* **98** 075303 (2018). arXiv:1806.04876 [citations: 13, IF= 4.036]
21. D. Walkup,^{\$} B.A. Assaf,[%] K.L. Scipioni,^{\$} R. Sankar,[%] F. Chou,[%] G. Chang,[%] H. Lin,[%] I. Zeljkovic,[%] V. Madhavan,^{%,*} "Interplay of orbital effects and nanoscale strain in topological crystalline insulator." *Nature Communications* **9** 1550 (2018). arxiv1610.09337. [citations= 14, IF= 12.124]
22. A. Inhofer,[#] J. Duffy,[@] M. Boukhicha,^{\$} E. Bocquillon,[%] J. Palomo,[%] K. Watanabe,[%] T. Taniguchi,[%] I. Estève,[%] J.M. Berroir,[%] G. Fève,[%] B. Plaçais,[%] B.A. Assaf.^{%,*} "RF compressibility of topological insulator Bi₂Se₃ in the bulk depleted regime", *Physical Review Applied* **9** 024022 (2018). arxiv1707.01657 [citations= 11, IF= 4.985]

Before 2018

23. B.A. Assaf,^{%,*} T. Phuphachong,[#] E. Kampert,^{\$} V. Volobuev,^{\$} P. Mandal,[#] J. Sanchez-Barriga,^{\$} O. Rader,[%] G. Bauer,[%] G. Springholz,[%] L.A. de Vaultier,[%] Y. Guldner,[%] "Negative magnetoresistance from anomalous N=0 Landau level in topological matter". *Physical Review Letters* **119**, 106602 (2017). **Editors' Suggestion**. [citations=39, IF=9.161]
24. A. Inhofer,[#] S. Tchoumakov,[#] B.A. Assaf,^{\$} G. Fève,[%] J.M. Berroir,[%] V. Jouffrey,[%] D. Carpentier,[%] M. Goerbig,[%] B. Plaçais,^{%,*} K. Bendias,[#] D.M. Mahler,[#] E. Bocquillon,^{\$} E. Schlereth,[#] C. Brüne,[%] H. Buhmann,[%] L.W. Molenkamp.[%] "Topological confined massive surface states in strained bulk HgTe probed by RF compressibility", *Physical Review B*. **96** 195104 (2017) [citations=38, IF= 4.036] arxiv.1704.04045. **Editors' Suggestion**.
25. B.A. Assaf,^{%,*} T. Phuphachong,[#] V.V. Volobuev,^{\$} G. Springholz,[%] G. Bauer,[%] L.A. de Vaultier,[%] Y. Guldner.[%] "Magneto-optical determination of a topological index". *NPJ Quantum Materials*. **2**, 26 (2017) [citations= 16, IF=7.41]. arxiv: 1608.08912
26. T. Phuphachong,[#] B.A. Assaf,^{%,*} V.V. Volobuev,^{\$} G. Springholz,[%] G. Bauer,[%] L.A. de Vaultier,[%] Y. Guldner.[%] "Dirac Landau Level Spectroscopy in Pb_{1-x}Sn_xSe and Pb_{1-x}Sn_xTe across the Topological Phase Transition: A Review". *Crystals* **7**, 29 (2017) [citations= 15, IF=2.589].
27. V. Callewaert,^{#,*} K. Shastry,[#] R. Saniz,[#] I. Makkonen,[%] B. Barbiellini,[%] B. A. Assaf,^{\$} D. Heiman,[%] J.S. Moodera,[%] B. Partoens,[%] A. Bansil,[%] A. Weiss,[%] "Positron surface state as a new spectroscopic probe for characterizing surfaces of topological insulator materials". *Physical Review B*. **94**, 115411 (2016) [citations=16, IF= 4.036]
28. F. Katmis,^{%,*} V. Lauter,^{%,*} F.S. Nogueira,[%] B.A. Assaf,^{\$} M.E Jamer,[#] P. Wei,[%] B. Satpati,[%] J.W. Freeland,[%] I. Eremin,[%] D. Heiman,[%] P. Jarillo-Herrero,[%] J.S. Moodera,[%] "A high-temperature ferromagnetic topological insulating phase by proximity coupling." *Nature* **533**, 513, (2016). [citations= 301, IF=40.137].

29. B.A. Assaf,^{*,} T. Phuphachong,[#] V.V. Volobuev,^{\$} A. Inhofer,[#] G. Springholz,[%] G. Bauer,[%] L.A. de Vaulchier,[%] Y. Guldner.[%] “Massive and massless Dirac fermions in Pb_{1-x}Sn_xTe topological crystalline insulator probed by magneto-optical absorption”. *Scientific Reports* **6**, 20323 (2016). [citations= 47, IF=4.259]. arxiv: 1510.01081
30. I. Zeljkovic,^{\$} D. Walkup,[#] B.A. Assaf,^{\$} K. Scipioni,[#] R. Sankar,[%] F. Chou,[%] V. Madhavan.^{%,*} “Strain engineering Dirac surface states in heteroepitaxial topological crystalline insulator thin films.” *Nature Nanotechnology* **10**, 849 (2015). arxiv: 1501.01233. [citations=64, IF=31.538]
31. B. A. Assaf,^{*,} F. Katmis,^{\$} P. Wei,^{\$} C.Z. Chang,^{\$} B. Satpati,[%] J.S. Moodera,[%] D. Heiman.[%] “Inducing magnetism onto the surface of a topological crystalline insulator”. *Physical Review B* **91**, 195310, (2015). arxiv: 1504.06121 [citations=25, IF= 4.036]
32. C.Z. Chang,^{*,} W. Zhao,[#] D.Y. Kim,[#] H. Zhang,[#] B.A. Assaf,[#] D. Heiman,[%] S.C. Zhang,[%] C. Liu,[%] M.H.W. Chan,[%] J.S. Moodera.[%] “High-precision realization of robust quantum Hall states in a hard ferromagnetic topological insulator.” *Nature Materials*, **14**, 473 (2015). [citations=650, IF= 39.737] arxiv: 1412.3758
33. M.E. Jamer,^{*,} B.A. Assaf,[#] G.E. Sterbinsky,^{\$} D. Arena,[%] L.H. Lewis,[%] A.A. Saul,[%] G. Radtke,[%] D. Heiman,[%] “Antiferromagnetic phase in gapless semiconductor V₃Al”, *Physical Review B*, **91**, 094409, (2015). [citations=33, IF= 4.036]
34. M.E. Jamer,^{*,} B.A. Assaf,[#] G.E. Sterbinsky,^{\$} D.A. Arena,[%] D. Heiman,[%] “Atomic moments in Mn₂CoAl thin films analyzed by X-ray magnetic circular dichroism”, *Journal of Applied Physics*, **116**, 213914 (2014). [citations=24, IF=2.546]
35. B.A. Assaf,^{*,} F. Katmis,^{\$} P. Wei,^{\$} B. Satpati,[%] Z. Zhang,[%] J.S. Moodera,[%] D. Heiman,[%] “Quantum coherent transport in SnTe topological crystalline insulator thin films”, *Applied Physics Letters*, **105**, 102108 (2014), arxiv 1403.1810 [citations=63, IF=4.383]
36. M.E. Jamer,[#] B.A. Assaf,[#] S. P. Bennett,[#] L.H. Lewis,[%] D. Heiman,^{%,*} “Magnetic properties and large coercivity in Mn_xGa_{1-x} nanostructures”, *Journal of Magnetism and Magnetic Materials*, **358-359**, 285 (2014).). [citations= 20, IF=2.993]
37. G.X. Miao,^{%,*} J. Chang,[#] B.A. Assaf,[#] D. Heiman,[%] and J.S. Moodera,[%] “Spin regulation in composite spin-filter barrier devices”, *Nature Communications*, **5**, 3682 (2014).). [citations= 30, IF=12.124]
38. T. Nan,[#] Z. Zhou,[#] M. Liu,[#] X. Yang,[#] Y.Gao,[#] B.A. Assaf,[#] H. Lin, S. Velu, X.Wang, H. Luo, J. Shen, S. Akhtar, E. Hu, R. Rajiv, K. Krishnan, S. Sreedhar, D. Heiman,[%] B.M. Howe,[%] G.J. Brown,[%] and N.X. Sun,^{%,*} “Quantification of strain and charge co-mediated magnetoelectric coupling on ultra-thin Permalloy PMN-PT interface”, *Scientific Reports*, **4**, 3368 (2014)). [citations=182, IF=4.259]

39. M.E. Jamer,[#] B.A. Assaf,[#] T. Devakul[@] and D. Heiman,^{%,*} “Magnetic and transport properties of spin gapless Mn₂CoAl films”, *Applied Physics Letters*, **103**, 142403 (2013), arxiv 1309.6660. [citations=89, IF=4.383]
40. P. Wei,^{%,*} F. Katmis,^{\$} B.A. Assaf,[#] H. Steinberg,^{\$} P. Jarillo-Herrero,[%] D. Heiman,[%] J.S. Moodera,[%] “Magnetic proximity-induced symmetry breaking in topological insulators”, *Physical Review Letters*, **110**, 186807 (2013). [citations=293, IF=9.161]
41. B.A. Assaf,^{%,*} T. Cardinal,[@] P. Wei,^{\$} F. Katmis,^{\$} J.S. Moodera,[%] D. Heiman,[%] “Linear Magnetoresistance in Topological Insulator Thin Films: Quantum Phase Coherence Effects at High Temperatures”, *Applied Physics Letters* **102**, 012102 (2013), arxiv: 1205.4635. [citations=141, IF=4.383]
42. B. Li,^{%,*} N. Roschewsky,[#] B.A. Assaf,[#] M. Eich,[#] M. Epstein-Martin,[%] D. Heiman,[%] M. Münzenberg,[%] J.S. Moodera,[%] Superconducting Spin Switch with Infinite Magnetoresistance Induced by an Internal Exchange Field, *Physical Review Letters*, **110**, 097001 (2013). [citations=110, IF=9.161]
43. B.A. Assaf,^{%,*} T. Cardinal,[@] P. Wei,^{\$} F. Katmis,^{\$} J.S. Moodera,[%] D. Heiman,[%] Modified Electrical Transport Probe Design for Standard Magnetometer, *Review of Scientific Instruments* **83**, 033904 (2012), arxiv: 1203.0682. [citations=19, IF=1.523]

Mentoring

High School (through QuarkNet).

Michael Dunham (Junior), Brian Tubbs (Teacher). 2019

Undergraduate students.

Tianyi Wang. ND Physics Class of 2022. Fall 2021 – Spring 2022.

Hoai Trinh. ND ACMS Class of 2025. Fall 2021

Josue Guera. ND Physics Class of 2024. Summer 2021 - present

William Powers. ND Physics Class of 2023. Co-author on 2 publications. Summer 2020 - present

Kerrie Koller. ND-St Mary's Dual Physics-AME Class of 2023. Co-author on 2 publications. Summer 2019 – present

Marie Gerges. ND Physics Class of 2024. Summer 2020 and Fall 2021

Bradlee McIntosh. REU, Ohio Northern University. Co-author on 1 publication. Summer 2021.

Kevin Borisiak. ND Physics Class of 2021. Co-author on 1 publication. Fall 2019 and Spring 2021. Currently: Researcher at the Cleveland Clinic.

Selina Nie. ND Computer Science. Class of 2023. Summer 2020 – Fall 2020.

Christian Bunker. ND Physics Class of 2020. Co-author on 2 publications. Spring 2020. Currently: Graduate Students at University of Florida.

Rahaf Youssef. St. Olaf College Class of 2023. Summer 2019.

Yohan Musle. REU, Florida Atlantic University. Summer 2019.

Daniel Spalinski. ND Physics Class of 2021. Fall 2019.

Alex Witte. ND Physics Class of 2021. Fall 2019.

Graduate students.

Logan Riney. BSc. University of Louisville 2018. 4th year.

Jiashu Wang. BSc. Beijing Institute of Technology 2018. 4th year.

Sara Bey. BSc. University of Tennessee at Chattanooga 2021. 1st year.

Kota Yoshimura. Shizuoka University 2021, Japan. 1st year

Muhsin Abdul Karim. Nkwame Nkrumah University of Science and Technology, Ghana. 2021 1st year.

Postdoctoral researcher.

Seul-Ki Bac (PhD 2020, Korea University)

Visiting Scientists.

Gauthier Krizman (Ecole Normale Supérieure, March 2019)

Invited talks and organized symposia

2022

Upcoming: Northwestern, Johns Hopkins, California??

American Vacuum Society Conference, October 2022

Julich Forschungszentrum Seminar, June 2022

KU Leuven, June 2022

Jaszowiec International School & Conference on the Physics of Semiconductors, June 2022

2021

Oakland University, October 2021

American Vacuum Society Conference, October 2021 - online

Co-organizer: Materials Research Society, Spring 2021 Symposium N01: Superconductors as quantum materials.

2020

Aalto University, Finland, webinar, May 2020 - online

2019

Argonne National Lab, IL, September 2019

Michigan State University, East Lansing, MI, September 2019

Army Research Lab, Adelphi, MD, June 2019

Naval Research Lab, Washington DC, June 2019

Anhui University, Hefei, China, May 2019

MIT, Physics Department Seminar, Cambridge, MA, March 2019,

American Physical Society, March meeting 2019, Boston MA, March 2019

2018

GDR NanoTeraMIR, Montpellier, May 2018

Laboratoire Charles Coulomb, Université de Montpellier, March 2018.

Before 2018

University of Notre Dame Colloquium, USA, November 2017.

Quantum Matter Institute, University of British Columbia, Vancouver, Canada, June 2017.

ENS-Princeton 2017 Workshop, Paris, France, January 2017.

ENS-University of Tokyo 2016 Workshop, Paris, France, November 2016.

The Hong Kong University, Hong Kong, China, November 2016.

Hong Kong University of Science and Technology, Hong Kong, China, November 2016.

Université Pierre et Marie Curie, INSP Seminars, Paris, October 2016.

GDR Physique Mésoscopique, Aussois, France, December 2014.

Internal talks

REU Lunch talk July 2021

REU Lunch talk July 2020

REU Lunch talk July 2019

Public lecture – Our Universe Revealed. How Emergence and Chemistry Continue to Change Our Lives. April 2019.

Electrical Engineering seminar. January 2019