

# 2024-2025 CNF Research Accomplishments

## A SELECTION OF 2024 CNF-RESEARCH-RELATED PATENTS, PRESENTATIONS, AND PUBLICATIONS

“(Real2Sim)-1:3D Branch Point Cloud Completion for Robotic Pruning in Apple Orchards”; Tian Qiu, Alan Zoubi, Nikolai Spine, Lailang Cheng, Yu Jiang, 2024 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 23-30 (2024).

“>200 GHz fMAX MBE Grown AlScN/GaN High Electron Mobility Transistors”; K. Nomoto, T.S. Nguyen, C.P. Savant, D. Jena, And H.G. Xing, 15th Topical Workshop on Heterostructure Microelectronics (TWHM) 2024, Aug. 26-29, 2024, Sendai, Japan (2024).

“1D Topological Systems for Next-Generation Electronics”; Judy Cha, Rice Workshop on Quantum Materials Synthesis (4/2024, Houston, TX) (2024).

“1D Topological Systems for Next-Generation Electronics”; Judy Cha, XIth Symposium in Quantum Materials Synthesis (1/2024, Physikzentrum Bad Honnef, Germany) (2024).

“2D Micropatterned Membrane for Studying Mechanotransduction in Striated Muscle”; Eitan Jentis, Poster Presentation (2024).

“2D Nanopatterned Membrane for Studying Mechanotransduction in Striated Muscle”; Eitan Jentis, Julie Heffler Ph. D., Jan Lammerding Ph. D., Biomedical Engineering Society (2024).

“2D Nanopatterned Membrane for Studying Mechanotransduction in Striated Muscle”; Eitan Jentis, Julie Heffler Ph. D., Jan Lammerding Ph. D., CNF Annual Meeting Poster Session 17 September 2024 (2024).

“3 W/Mm Output Power, High Breakdown in Volume-Scalable MOCVD- Grown AlN-Buffer HEMTs on 4-Inch Sic”; Reet Chaudhuri, Austin Hickman, Shankar Miller-Murthy, International Workshop on Nitride Semiconductors November 8, 2024 (2024).

“A 3D In Vitro Model of Secondary Lymphatic Valve Morphogenesis Reveals WNT as a Therapeutic Target for Inflammation-Induced Lymphatic Valve Dysfunction”; Renhao Lu, Rafael S. Czepielewski, And Esak Lee, Lymphatics Gordon Research Conference 2024, Ventura, CA (2024).

“A D-Band Frequency-Doubling Solid-State Traveling-Wave Amplifier”; L. Li, T. Li, J. C. M. Hwang, And P. Fay, In Gov. Microcircuits Appl. Critical Technol. Conf. (Gomactech), Charleston, SC, USA, March 2024, Pp. 1-6 (2024).

“A D-Band Frequency-Doubling Traveling-Wave Amplifier Through Monolithic Integration of a SiC SIW and GaN HEMTs”; L. Li, P. Fay, And J. C. M. Hwang, IEEE Journal of Microwaves, Volume 4, No. 1, Pp. 158-166, Jan. 2024, Doi: 10.1109/JMW.2023.3340117 (2024).

“A D-Band Traveling-Wave Amplifier by Embedding GaN HEMTs as Current Probes in a SiC SIW”; L. Li, T. Li, P. Fay, and J. C. M. Hwang, In 2024 IEEE MTT-S Int. Microw. Symp. (IMS) Dig., Washington, DC, USA, June 2024, Pp. 686-689, Doi: 10.1109/IMSS40175.2024.10600279 (2024).

“A Design Methodology for a Dual-Mode Coplanar Waveguide Junction Circulator”; K. Srinivasan, A. El-Ghazaly, International Microwave and Antenna Symposium (IMAS), Marrakesh, Morocco (2024).

“A Fully Programmable On-Chip Planar Waveguide for Machine Learning”; Stein, M. M., Onodera, T., Ash, B. A., Sohoni, M. M., Bosch, M., Yanagimoto, R., ... & McMahon, P. L., In CLEO: Science and Innovations (Pp. SF2M-1). Optica Publishing Group (2024).

“A Fully Programmable Two-Dimensional Photonic Chip for Machine Learning”; Onodera, T., Stein, M. M., Ash, B. A., Sohoni, M. M., Bosch, M. J., Yanagimoto, R., ... & McMahon, P. L., Nanoscience + Engineering 2024: In Photonic Computing: From Materials and Devices to Systems and Applications (P. PC1311303) SPIE. (2024).

“A High Throughput Array Microhabitat Platform Reveals How Light and Nitrogen Colimit the Growth of Algal Cells”; Fangchen Liu, Larissa Gaul, Andrea Giometto & Mingming Wu, Scientific Reports 14, Article Number: 9860 (2024).

“A Human Initial Lymphatic Chip Reveals Distinct Mechanisms of Primary Lymphatic Valve Dysfunction in Acute and Chronic Inflammation”; Kraus S., Lee E., Biomedical Engineering Society (BMES) Annual Meeting, Baltimore, MD (2024).

“A Human Initial Lymphatic Chip Reveals Distinct Mechanisms of Primary Lymphatic Valve Dysfunction in Acute and Chronic Inflammation”; Kraus S., Lee E., Gordon Research Conference (GRC Lymphatics, Ventura, CA, 2024) (2024).

“A Miniaturized High-Density Soft Brain Probe for Stable, Long-Term Hippocampus Recordings”; Jaehyo Park (Presenter), Zifang Zhao, Lindsay Karaba, Azahara Olivia, Antonio Fernandez-Ruiz, 2024 NNN Symposium (2024).

“A Mm-Wave Blocker-Tolerant Harmonic-Resilient N-Path Mizer-First Receiver with 6.2 dB NF and 5 D=dBm)) B-B1dB”; Shimin Huang, Jamie C. Ye, Shahaboddin Ghajari, Alyosha C. Molnar, 2024 IEEE Custom Integrated Circuits Conference (CICC), Denver, CO, USA, 2024, Pp. 1-2 (2024).

“A Multiplexed Microfluidic Continuous-Flow Electroporation System for Efficient Cell Transfection”; Jacob A. Vanderburgh, Grant T. Corso, Stephen L. Levy, & Harold G. Craighead, Springer Nature Link: Volume 26, Article Number 10, 2024 (2024).

“A Pseudo-Surfactant Chemical Permeation Enhancer to Treat Otitis Media Via Sustained Transtympanic Delivery of Antibiotics”; Sophie S. Liu, Joanna M. White, Zhongmou Chao, Ruye Li, Shuxian Wen, Ally Garza, Wenjing Tang, Xiaojing Ma, Pengyu Chen, Susan Daniel, Frank S. Bates, Jingjie Yeo, Michelle A. Calabrese, Rong Yang, Advanced Healthcare Materials, Volume 13, Issue 22, September 1, 2024. 2400457 (2024).

“A Quantized Anomalous Hall Effect Above 4.2 K in Stacked Topological Insulator/Magnet Bilayers”; Rakshit Jain, Matthew Roddy, Vishakha Gupta, Benjamin Huang, Hasan M. Sayeed, Husain F. Alnaser, Amit Vashist, Kenji Watanabe, Takashi Taniguchi, Vikram V. Deshpande, Taylor D. Sparks, Daniel C. Ralph, Mesoscale and Nanoscale Physics arXiv: 2412.05380 6 December 2024 (2024).

- “A Randomized Trial of Aerobic Exercise in Colorectal Cancer: Rationale, Design, Recruitment, and Exercise Adherence Results”; Stephanie LE Compton, Shengping Yang, Lauren S Maniscalco, Reem A Muhsen, Pratibha Shrestha, Xiaocheng Wu, Kaylee T Woodard, Elizabeth RM Zunica, Eunhan Cho, Rachel L Wall, John Brown, Anjana Jayaraman, Brian J Kirby, L Anne Gilmore, Frank L Greenway, Guillaume Spielmann, Justin C Brown, *Contemporary Clinical Trials* Volume 146, Pp. 107702 2024/11/1 (2024).
- “A Sound Approach for Ova Denudation”; Amir Mokhtare Ph. D., Amirhossein Favakeh M.S., Philip Xie B.Sc., Zev Rosenwaks M.D., Alireza Abbaspourrad Ph.D., Gianpiero Palermo M.D. Ph.D., Science Direct: F&S Science (2024).
- “A<5dBNF, >17dbm OP1dB F-Band GaN-On-SiC HEMT LNA with a Monolithic Substrate-Integrated Waveguide Filer”; F. Thome, D. Schwantuschke, P. Brueckner, X. Wang, J. C. M. Hwang, and R. Quay, In 2024 IEEE MTT-S Int. Microw. Symp. (IMS) Dig., Washington, DC, USA, June 2024, Pp. 314-317, Doi: 10.1109/IMS40175.2024.10600353 (2024).
- “Absence of 3a0 Charge Density Wave Order in the Infinite-Layer Nickelate NdNiO<sub>2</sub>”; C. T. Parzyck, N. K. Gupta, Y. Wu, V. Anil, L. Bhatt, M. Bouliane, R. Gong, B. Z. Gregory, A. Luo, R. Sutarto, F. He, Y.-D. Chuang, T. Zhou, G. Herranz, L. F. Kourkoutis, A. Singer, D. G. Schlom, D. G. Hawthorn & K. M. Shen, *Nature Materials* 23, 486-491 (2024).
- “Absorption and Scattering Limits of Silicon Nitride Integrated Photonics in the Visible Spectrum”; Mateus Corato-Zanarella, Xingchen Ji, Aseema Mohanty, And Michal Lipson, *Optica Publishing Group: Optics Express*; Volume 32, Issue 4, Pp. 5718-5728 (2024).
- “Active Topography with Mucin Coating for Biofilm Control”; Zehui Han, Yikang Xu, Dacheng Ren, *BMES* 2024, Oct. 2024, Baltimore MD (2024).
- “Addition to “All-Glass 100 Mm Diameter Visible Metalens for Imaging the Cosmos”; Joon-Suh Park, Soon Wei Daniel Lim, Arman Amirzhan, Hyukmo Kang, Karlene Karrfalt, Daewook Kim, Joel Leger, Augustine Urbas, Marcus Ossiander, Zhaoyi Li, Federico Capasso, *ACS Nano*, Volume 18, Issue 25, 16324 (June 2024) (2024).
- “Additive Manufacturing and Characterization of Porous Glass Electrospray Emitters”; Suhail Chamieh, Carl Geiger, Giancarlo D’Orazio, & Sadaf Sobhani, *Research Gate*; In 38th International Electric Propulsion Conference (IEPC) (2024).
- “Advancements in GaN-Based HEMTs: Exploring High-K Barrier Materials AlScN, AlBN, And AlYN for Enhanced Performance”; Kazuki Nomoto, T.S. Nguyen, C.P. Savant, Debdeep Jena, and Huili Grace Xing, *ASPIRE Symposium, Tokai Open Innovation Complex (TOIC) Nagoya University*, Sep. 13, 2024 (2024).
- “Advancing Glucose Sensing Through Auto-Fluorescent Polymer Brushes: From Surface Design to Nano-Arrays”; Gozde Aktas Eken, Yuming Huang, Oswald Prucker, Jürgen Rühle, Christopher Ober, *Small*. 2024 May; 20 (22): E2309040. Doi: 10.1002/Smll.202309040. (2024).
- “AlGa<sub>N</sub> Channel POLJFET with an Ultrawide Bandgap DPD Pn Junction Gate”; Madhav Ramesh, Shivali Agrawal, Huili (Grace) Xing, Debdeep Jena, *PowerPoint Presentation*, 2024 DRC (2024).
- “All-Dielectric Hybrid VIS-NIR Dual-Function Metaoptic”; Pei Xiong, Daniel K Nikolov, Fei Cheng, Jannick P Rolland and a N Vamivakas, *Journal of Optics*, Volume 26, Number 7 DOI: 10.1088/2040-8986/Ad4721 (2024).
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- “All-Mist-CVD NiO/Ga<sub>2</sub>O<sub>3</sub> Diodes”; Bennett Cromer, *IWGO* 2024, Berlin Germany (2024).
- “All-Optical Frequency Division On-Chip Using a Single Laser”; Yun Zhao, Jae K. Jang, Garrett J. Beals, Karl J. McNulty, Xingchen Ji, Yoshitomo Okawachi, Michal Lipson & Alexander L. Gaeta, *Nature* 627, Pp. 546-522 (11 March 2024) (2024).
- “Amidst Whispers of Ice and Fire: Kinetics and Mechanisms of Retention and Transformation of Glyphosate at Organo-Mineral Interfaces”; Azimzadeh Ismaili Kandi, Behrooz, *Cornell University Proquest Dissertations & Theses*, 2024.31484490 (2024).
- “An Introduction to Engineered Living Materials”; Hernandez, C.J., *Multifunctional Materials and Structures Gordon Research Conference* Ventura, CA, USA. (2024).
- “An Optical Sensor Path for the Measurement of Water Activity”; Wu, I. -F., Stroock, A. D., Jain, P., Huber, A. E. & Sen, S., *US Provisional Patent Application*. 63/573,961 (2024).
- “Anisotropic Spin Stripe Domains in Bilayer La<sub>3</sub>Ni<sub>2</sub>O<sub>7</sub>”; N. K Gupta, R. Gong, Y. Wu, M. Kang, C. T. Parzyck, B. Z. Gregory, N. Costa, R. Sutarto, S. Sarker, A. Singer, D. G. Schlom, K. M. Shen, D. G. Hawthorn, *Cond-Mat-arXiv*:2409.03210 (2024).
- “Arbitrarily Programmable Wave Propagation on a Photonic Chip”; Stein, M. M., Onodera, T., Ash, B. A., Sohoni, M. M., Bosch, M., Yanagimoto, R., ... & McMahon, P. L., In *Machine Learning in Photonics* (Vol. 13017, Pp. 96-99) (2024).
- “Artificial Cilium and Arrays Thereof”; I. Cohen, W. Wang, O. Liu, *US Patent Appl*. 18/783,271. (2024).
- “Atomic Fluorescence Collection into Planar Photonic Devices”; Orion Smedley, Vighnesh Natarajan, Oscar Jaramillo, Hamim Mahmud Rivy, Karan K. Mehta, *arXiv*:2408.07068 13 August 2024 (2024).
- “Beyond Proof of Concept NanoSQUID’s”; Striff, Alex, *Lecture at Stanford University*, December 16, 2024 (This Work Is Supported by the Air Force Office of Scientific Research’s (AFOSR) Multidisciplinary University Research Initiative (MURI) Through Award No. FA9550-21-1-0429 (2024).
- “Bioinspired Active Topographies with Mucin Coating of Micron-Sized Pillars”; Zehui Han, Yikang Xu, Dacheng Ren, *ICBZM2024*, July 2024, Cornell University, Ithaca NY (2024).
- “Bio-Inspired Flow-Sensing Capacitive MEMS Microphone”; Johar Pourghader, Weili Cui, Junpeng Lai, Mahdi Farahikia, Changhong Ke, Morteza Karimi, Ronald N Miles, *Techrxiv. IEEE Sensors Journal*, January 22, 2024. DOI: 10.36227/Techrxiv.170595888.89023812/V1 (2024).
- “Bone Matrix Mineral Content Regulates Early-Stage Metastasis by Altering Mesenchymal Stem Cell Fat”; N. Sempertegui, Y. Yan, M. Whitman, S. Choi, L. Estroff, and C. Fischbach, (Poster Presentation) *Signal Transduction by Engineered Extracellular Matrices Gordon Research Conference*, Manchester NH, July 21-26, 2024 (2024).
- “Bone Mineral Density Loss Permits Breast Cancer Metastasis and Growth Via Microenvironmental Alterations”; Matthew Whitman, *PhD Thesis* (2024).

“Bridging Simulation and Experiment: Tuning Dimensional Order in Feco Magnetic Nanostructures”; Y. Chen, H. Zhang, A. El-Ghazaly, Intermag Conference, Rio De Janeiro, Brazil (2024).

“Cavity Controlled Upconversion in CdSe Nanoplatelet Polaritons”; Mitesh Amineric R. Koesslerovishek Morshedfarwa Awannicole M. B. Coganrobert Collisontrevor M. Tumiellwilliam Girtenchristopher Leitera. Nickolas Vamivakaspengfei Huo, Todd D. Krauss, ACS Nano Volume 18, Issue 32, July 30, 2024 (2024).

“CCAT: Characterizing the Fabry-Perot Interferometer Mirrors and Mount for the Epoch of Reionization Spectrometer”; Bugao Zou, J. Richard Bond, Victoria Butler, Rodrigo Freundt, Zachary B. Huber, Michael D. Niemack, Thomas Nikola, Gordon J. Stacey, Eve M. Vavagiakis Millimeter, Submillimeter, and Far-Infrared Detectors and Instrumentation for Astronomy XII. Vol. 13102. SPIE (2024).

“Characterization and Testing of Additively Manufactured Porous Ceramic Electrospray Emitters”; Luke S. D’Cruz, Carl J. Geiger, Suhail Chamieh, Benjamin Inbar, Sadaf Sobhani, & Elaine Petro, In AIAA SCITECH 2024 Forum (2024).

“Characterization of Joined Alumina Components Manufactured Via Digital Light Processing”; Brooklyn Jenkins, CNF REU Program Report (2024).

“Characterization of Thermalization Timescales in Superconducting Qubits Using Quasiparticle Poisoning Rates”; K.Dodge, Contributed Talk: American Physical Society March Meeting, Minneapolis, MN, March 2024 (2024).

“Chasing Schottky–Mott: Metal-First Non-Alloyed Contacts to  $\beta$ -Ga<sub>2</sub>O<sub>3</sub> for Interface Quality and Minimal Surface Modification; Kathleen T. Smith”; Cameron A. Gorsak; Joshua T. Buontempo; Bennett J. Cromer; Takumi Ikenoue; Hemant Gulupalli; Michael O. Thompson; Debdeep Jena; Hari P. Nair; Huili Grace Xing, Journal of Applied Physics Volume 136, Issue 21, 7 December 2024 (2024).

“Chemical Control of Semiconductor Surface: XPS And STM”; Qingyuan Zhu, Ph.D. Theses, Cornell University (2024).

“Chemical-Vapor-Deposition (CVD) Growth of Porous Two-Dimensional Polymer for Dielectric Applications in Microelectronics”; Qiyi Fang, Yu Zhong, Jun Lou, MRS Fall 2024 (2024).

“Chromatin Buffers Torsional Stress During Transcription”; Jin Qian, Lucyna Lubkowska, Shuming Zhang, Chuang Tan, Yifeng Hong, Robert M Fulbright, James T Inman, Taryn M Kay, Joshua Jeong, Deanna Gotte, James M Berger, Mikhail Kashlev, Michelle D Wang, Biorxiv 2024 Oct. 18 Doi: 10.1101/2024.10.15.618270 (2024).

“CMOS on AIN Platform”; Kazuki Nomoto, T.S. Nguyen, C.P. Savant, Debdeep Jena, And Huili Grace Xing, University of Tokyo, Tokyo, Japan 4 September 2024 (2024).

“Co-Designed Silicon Photonics Chip I/O for Energy-Efficient Petascale Connectivity”; Yuyang Wang, Songli Wang, Robert Parsons, Swarnava Sanyal, Vignesh Gopal, Asher Novick, IEEE Transactions on Components, Packaging and Manufacturing Technology, Pp. 1-1. (2024).

“Coherent Acoustic Control of Defect Orbital States in the Strong-Driving Limit”; B.A. McCullian, V. Sharma, H.Y. Chen, J.C. Crossman, E.J. Mueller, & G.D. Fuchs, PRX Quantum 5, 030336-19 August 2024 (2024).

“Collagen Mineralization Decreases NK Cell-Mediated Cytotoxicity of Breast Cancer Cells Via Increased Glycocalyx Thickness”; Sangwoo Park, Siyoung Choi, Adrian A. Shimpi, Lara A. Estroff, Claudia Fischbach, Matthew J. Paszek, Advanced Materials, Volume 36, Issue 43, Special Issue: Engineering Active Materials for Biomedical Applications, October 24, 2024, 2311505 (2024).

“Compact Narrow-Linewidth Integrated Laser”; Brian Stern, Xingchen Ji, Michal Lipson, US11870216B2, 1 January 2024 (2024).

“Comparing Micro- and Nanoscale NbO<sub>2</sub> Devices for Memristive Applications”; Matthew C Sullivan, 2024 APS March Meeting (2024).

“Comparison of Torque Generated by In-Plane and Out-Of-Plane Anisotropic Magnetorheological Elastomers”; H. Htet, L. Cestarollo, A. El-Ghazaly, Intermag Conference, Rio De Janeiro, Brazil (2024).

“Complex Permittivities of Ultra-Low-Loss 4H-SiC from 55 GHz to 330 GHz”; Y. Yanagimoto, S. Yanagimoto, T. Li, And J. C. M. Hwang, In 2024 103rd ARFTG Microw. Meas. Symp. (ARFTG), Washington, DC, USA, June 2024, Pp. 1-4, Doi:10.1109/ARFTG61196.2024.10660704 (2024).

“Compositions, Methods, and Devices for Integrated Photonics”; O. Jaramillo, K.K. Mehta, Provisional Application No. 63/643, 779 May (2024).

“Continuous Tuning from Bright to Dark States in Coupled Photonic Resonators”; Graydon J. K. Flatt, Karl J. McNulty, Oliver L. Wang, And Michal Lipson, In CLEO 2024 (2024), Paper Stu4q.1. CLEO: Science And Innovations, Optica Publishing Group, P. Stu4q.1. (2024).

“Controllable Suppression of the Unconventional Superconductivity in Bulk and Thin-Film Sr<sub>2</sub>RuO<sub>4</sub> via High-Energy Electron Irradiation”; Jacob P. Ruf, Hilary M. L. Noad, Romain Grasset, Ludi Miao, Elina Zhakina, Philippa H. McGuinness, Hari P. Nair, Nathaniel J. Schreiber, Naoki Kikugawa, Dmitry Sokolov, Marcin Konczykowski, Darrell G. Schlom, Kyle M. Shen, And Andrew P. Mackenzie, Physical Review Research 6, 033178- 16 August 2024 (2024).

“Controlling Anisotropy in Magnetic Thin-Films for Integrated Device Operations”; A. El-Ghazaly, Emerging Leader Award Session, 35th Annual Symposium of the Pacific Northwest Chapter (PNWAVS) Of AVS, Richland, Washinton, August 7, 2024 (2024).

“Controlling Anti-Penetration Performance by Post-Grafting of Fluorinated Alkyl Chains onto Polystyrene-Block-Poly (Vinyl Methyl Siloxane)”; Zhenglin Zhang, Krishnaroop Chaudhuri, Florian Kaefer, Anthony P. Malanoski, Kirt A. Page, Louisa M. Smieska, Jonathan T. Pham, & Christopher K. Ober, ACS Applied Materials & Interfaces Volume 16, Issue 15, April 8, 2024, 19594-19604 (2024).

“Coordinated Behavior of Autonomous Microscopic Machines Through Local Electronic Pulse Coupling”; Milad Taghavi, Wei Wang, Kyubum Shim, Jinsong Zhang, Itai Cohen, & Alyssa Apsel, Science Robotics Volume 9, Issue 96, DOI:10.1126/Scirobotics. Adn8067 (2024).

“Correlated Phonon-Mediated Quasiparticle Poisoning of Superconducting Qubit”; Britton Plourde, Invited Talk: Conference on Noise and Decoherence in Qubits, Aspen Winter Conference, Aspen, CO, February 2024 (2024).

“Coupling Between Charge Density Waves and Stacking Order in Layered Quantum Materials Probed by In-Situ Cryo STEM”; Judy Cha, Microscopy and Microanalysis Conference (M&M 2024) (7/2024, Cleveland, OH) (2024).

- “Deciphering Bacterial Cell Envelope Mechanics and Mechanosensing: A Mechanical Engineering Approach”; Junsung Lee, Cornell University ProQuest Dissertations & Theses (2024).
- “Decoding Physical Principles of Cell Migration Under Controlled Environment Using Microfluidics”; Young Joon Suh; Alan T. Li; Mrinal Pandey; Cassidy S. Nordmann; Yu Ling Huang; Mingming Wu, *Biophysics Reviews* Volume 5, Issue 3 September 2024 (2024).
- “Deep Inverse Design of an Infrared Metasurface Diffuser”; Natalie Rozman, Rixi Peng, Willie J. Padilla, *Advanced Optical Materials* Volume 12, Issue 33, 25 November 2024 2401462 (2024).
- “Deep-UV Distributed Feedback Laser Diode Design with Ultrawide Bandgap Semiconductor Aigan”; Hsin Wei (Sheena) Huang, Shivali Agrawal, Huili (Grace) Xing, and Debdeep Jena, PowerPoint Presentation, 2024 ICPS, Ottawa, Canada (2024).
- “Defect Discovery and Identification”; Gregory Fuchs, Cussion Leader, Defects in Semiconductors GRC, Newry, ME (2024).
- “Design, Fabrication and Characterization of Multi-Qubit Devices for Quasiparticle Injection Studies”; Presenter: Ben Byrd -Authors: Ben Byrd, Kesavan Manivannan, Nada Elmeligy, Ivan V. Pechenezhskiy, 2024 APS March Meeting; Minneapolis & Virtual S48.00007 (2024).
- “Designing Magnetic Manipulation at the Nanoscale”; A. El-Ghazaly, ECE Graduate Seminar, Carnegie Mellon University, September 27, 2024 (2024).
- “Designing Magnetic Manipulation at the Nanoscale”; A. El-Ghazaly, IEEE Electron Device Society Seminar, Cornell University, September 13, 2024 (2024).
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- “Development of a 3D Microfluidic Platform for Dynamic Compression of Tumor Spheroids”; Young Joon Suh, Mrinal Pandey, Tao Luo, Jeffrey E Segall & Mingming Wu, Cornell BEE Annual Research Symposium (Poster Presentation), Ithaca, NY, Feb 16, 2024 (2024).
- “Development of a Microphysiological System to Model Human Cancer Metastasis from the Colon to the Liver”; Paula G. Miller, Emina Huang, Robert Fisher, Michael L. Shuler, *Biotechnology Bioengineering* 2024:1-14 Volume 122, Issue 3, Pp. 481-494 (2024).
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- “Effect of Co-Reactants on Interfacial Oxidation in Atomic Layer Deposition of Oxides on Metal Surfaces”; Jay V. Swarup, Heng-Ray Chuang, Amy L. You, And James R. Engstrom, *ACS Applied Materials & Interfaces*. Volume 16, Issue 13, March 20, 2024 (2024).
- “Effective Integration of Vision Foundational Models for Semantic Segmentation to Quantify Grape Foliage Powdery Mildew Infection”; Yiyuan Lin, Anna Underhil, Lance Cadle-Davison, Ana Jimenez, Summaira Riaz, Yu Jiang, *ASABE Paper No. 2401108*, 2024 ASABE Annual International Meeting, Anaheim, CA, USA (2024).
- “Effects of ALD Chemistry on Process Windows, Thin Film Composition and Modification of the Underlying Substrate Surface”; Jay Swarup, *American Vacuum Society 70th International Symposium and Exhibition Conference*, 2024 (2024).
- “Efficient Data Processing Using Tunable Entropy-Stabilized Oxide Memristors”; Sangmin Yoo, Sieun Chae, Tony Chiang, Matthew Webb, Tao Ma, Hanjong Paik, Yongmo Park, Logan Williams, Kazuki Nomoto, Huili G. Xing, Susan Trolier-McKinstry, Emmanouil Kioupakis, John T. Heron, Wei D. Lu, *Natural Electronics* Volume 7, Issue 6, Pp. 466-474, June 2024 (2024).
- “Electronic Capacitance in Tunnel Junctions for Protected Charge-Parity Qubits”; B. Cole, Contributed Talk: American Physical Society March Meeting, Minneapolis, MN, March 6, 2024 (2024).
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