INDRAJIT SRIVASTAVA, Ph.D.

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SUMMARY OF ACCOMPLISHMENTS AT TEXAS TECH UNIVERSITY.

Since joining Texas Tech University **less than three years ago**, Dr. Indrajit Srivastava has rapidly built a program in nanobiotechnology and biomedical imaging. His pioneering work on 3D tumor-mimicking phantoms and afterglow nanoprobes for image-guided cancer surgery has been published in high-impact scientific journals such as *ACS Nano* and *Advanced Functional Materials* and includes several invited and commemorative reviews. Notably, he co-authored a landmark review article commemorating the 50th anniversary of Surface-Enhanced Raman Spectroscopy (SERS) alongside top global experts in the field. His research has garnered significant attention, with multiple articles featured as journal cover arts and highlighted by TTU media. **He has secured over ~$3M in external competitive funding** from National Institute of Health, American Heart Association (AHA), Cancer Prevention & Research Institute of Texas (CPRIT), and the Robert A. Welch Foundation as Principal Investigator and filed provisional patent related to his lab's translational surgical technology and NIR-II imaging probes, respectively. He was named one of only 8 global recipients of the *'2025 Rising Stars in Nanoscience*' distinction by the American Chemical Society and was invited to the Welch X Retreat by The Welch Foundation, an exclusive event for promising tenure-track and tenured professors across Texas. These honors, alongside his scholarly output and translational focus, mark him as a rapidly ascending leader whose work is amplifying **TTU's scientific visibility in biomedical innovation**.

Dr. Srivastava is also deeply committed to mentorship and academic service, currently guiding more than 15 undergraduate, graduate, and high school researchers. His mentees have earned national-level and local honors such as the prestigious National Science Foundation GRFP, Barry Goldwater Scholarship, multiple AHA SURE summer internships, and have won top prizes in university research competitions such as Lubbock Economic Development Alliance (LEDA) commercialization awards. He contributes meaningfully to graduate education, peer review, MD/E admissions process, reinforcing his role as a **dedicated and impactful member of the TTU academic community**.

EDUCATION.

Doctor of Philosophy in Bioengineering (GPA: 4/4) *May 2020*
University of Illinois at Urbana-Champaign, IL, USA
Advisor: Prof. Dipanjan Pan
Thesis: Next Generation Multi-Color Carbon Dots: Comprehensive Understanding of their Photophysical Properties and Subsequent Use in Biomedical Applications
Thesis Committee: Prof. Dipanjan Pan, Prof. Shuming Nie, Prof. Joseph Irudayaraj, Prof. Kai Zhang

Master of Science in Bioengineering (GPA: 3.6/4) *May 2017*
University of Illinois at Urbana-Champaign, IL, USA
Advisor: Prof. Dipanjan Pan
Thesis: Surface Chemistry of Carbon Nanoparticles Functionally Select Their Uptake in Various Stages of Cancer Cells

Bachelor of Engineering in Materials Science (GPA: 3.8/4) *May 2015*
Indian Institute of Engineering Science & Technology (IIEST), Shibpur, India
Recipient of Prof. A. K. Seal Memorial Undergraduate Academic Fellowship

RESEARCH EXPERIENCES.

Assistant Professor *September 2023 – Present*
Department of Mechanical Engineering,
Edward E. Whitacre Jr. College of Engineering,
Texas Tech University, TX, USA

- My research program develops bioinspired biomaterials using a combination of microfluidic approaches, nanoscience strategies, and nanoengineering approaches having potential applications in improving healthcare diagnostics and therapeutics.

Postdoctoral Research Associate *July 2020 – June 2023*
University of Illinois at Urbana-Champaign, IL, USA
Research Mentors: Prof. Shuming Nie & Prof. Viktor Gruev

- Pioneered the design and development of a new class of biomimetic plasmonic nanoparticles with enhanced dispersion stability features (including research to freeze-thaw cycles, heating, physiological solutions, and easily lyophilizable) and superior Surface-enhanced Raman scattering (SERS) signal profile.
- Optimized these biomimetic plasmonic nanoparticles for rapid disease diagnosis (cardiovascular diseases, hypofibrinogenemia) and multi-modal image-guided surgical interventions having fluorescence, photoacoustic, and CT capabilities.
- Integrated biomimetic features to polymer-lipid nanoparticles and using a hexachromatic near-infrared fluorescence camera sensor demonstrated receptor-specific image-guided surgery and multiplexed optical imaging of tumor biomarkers at single excitation wavelength.

Graduate Research Assistant *August 2015 – May 2020*
University of Illinois at Urbana-Champaign, IL, USA
Research Advisor: Prof. Dipanjan Pan

- Designed, developed, and optimized the synthesis and optical properties of novel polymeric nanoparticle probes, called Carbon Dots as well as characterizing them physiochemically and biologically for the purpose of multi-scale bioimaging, cancer cell targeting, intracellular trafficking, drug delivery, and diagnostics.
- Culminated in 29 publications, including 14 first author/co-first authors in high-impact scientific journals including *Advanced Functional Materials*, *ACS Nano*, *Journal of American Chemical Society, PNAS*, and *Nature Communications*.

Visiting Undergraduate Summer Researcher *May 2014 – July 2014*
University of Illinois at Urbana-Champaign, IL, USA
Research Mentors: Prof. Dipanjan Pan & Dr. Santosh Misra

- Developed and optimized a novel nanoparticle from hyperstar polymers for combinatorial therapy with a capacity to encompass drugs that selectively target triple-negative breast cancer (TNBC) cells.
- Demonstrated a 4-fold proficiency than individual drugs and 20 times more selective than parent drug in *in vivo* TNBC mouse models. Published the findings in a paper as co-author in *Chem. Commun.* 2015.

RESEARCH FUNDINGS.

Current Fundings.

1. **Title of the grant:** Design Maps Linking Polymer Architecture and Pharmacokinetics: A Platform for Generalizable Bioimaging
   Funding agency: Maximizing Investigators Research Award (MIRA) for Early-Stage Investigators, National Institute of General Medical Sciences, NIH.
   Dates: 8/1/2026 – 7/31/2031
   Total amount: $2,081, 322
   Role on the project: Single PI
   Impact Score: 27 (Scoring Range: 10-90)

2. **Title of the grant:** Albumin-Complexed Cyanine-Based NIR Afterglow Nanoprobes for Image-Guided Cancer Surgery
   Funding agency: Cancer Prevention & Research Institute of Texas High Impact/High Risk Award
   Dates: 8/1/2026 – 7/31/2028
   Total amount: $249,727 ($249,727 to PI)
   Role on the project: Single PI, Collaborator with effort: Dr. Syed Muhammad Usama (UTSA)
   Impact Score: 2.5 (Scoring Range: 1-9)

3. **Title of the grant:** Hypoxia-Activatable NIR-II Nanoprobes for Early Detection and Precise Treatment of Pulmonary Embolism
   Funding agency: American Heart Association Career Development Award
   Dates: 4/1/2026 – 3/31/2029
   Total amount: $231,000 ($231,000 to PI, including IDC: $23,100)
   Role on the project: Single PI
   Percentile: Top 10% in Basic Sciences Study Section
   Spotlight: Edward E. Whitacre College Jr. of Engineering (Link)

4. **Title of the grant:** 'Ping-Pong' Afterglow Luminescence in Self-Assembled Molecular Cubes
   Funding agency: The Robert A. Welch Foundation Pilot Award
   Dates: 8/1/2025 – 7/31/2026
   Total amount: $100,000 ($50,000 to PI)
   Role on the project: PI, Co-PI: Dr. O. Miljanenic (U Houston)
   Spotlight: Edward E. Whitacre College Jr. of Engineering (Link)

5. **Title of the grant:** Platelet-Mimicking NIR Afterglow Nanoprobes for Precise Early Detection of Atherosclerosis Plaques
   Funding agency: American Heart Association Institutional Research Enhancement Award
   Dates: 1/1/2025 – 12/31/2026
   Total amount: $200,000 ($195,000 to PI, including IDC: $20,000)
   Role on the project: Single PI Collaborator with effort: Dr. Z. Hong (TTU)
   Percentile: Top 30%
   Spotlight: Edward E. Whitacre College Jr. of Engineering (Link)

Past Fundings (Declined).

1. **Title of the grant:** Evaluating mRNA-LNPs Therapeutic Delivery in Patient-Derived Tumor Organoids Across Diverse Microenvironment Contexts
   Funding agency: Alexander von Humboldt Foundation
   Host Institution: Biotechnology Center (BIOTEC), Technische Universitat, Dresden, Germany
   Dates: 05/31/2022 – 06/1/2024
   Total amount: $100,000
   Role on the project: PI
   Status: Awarded, declined to start independent career at Texas Tech University
   Spotlight: University of Illinois Department of Bioengineering (Link)

ACADEMIC HONORS, AWARDS & RECOGNITION.

• **Maximizing Investigators' Research Award,** NIGMS, National Institute of Health (**2026**)
• **Honored Faculty Member, Phi Beta Kappa** Texas Tech University (**2026**)
• **American Heart Association Career Development Award,** American Heart Association (**2026**)
• **Early Career Reviewer**, National Institute of Health (**2026**)
• **Rising Stars in Nanoscience**, *American Chemical Society* – One of 8 researchers worldwide (**2025**)
• **Outstanding Faculty Mentor Awards**, *Texas Tech University* (**2025**)
• **Welch X Retreat Invitee***, The Welch Foundation* – one of the 24 tenure-track faculty in Texas. (**2025**)
• **Inducted into President's STEM Mentorship Academy**, *Texas Tech University* (**2024**)
• **Outstanding Faculty Mentor Awards**, *Texas Tech University* (**2025**)
• **Selected for Faculty Mentorship Academy**, *Texas Tech University* (**2023**)
• **Graduate Student & Postdoctoral Scholars Recognition Program Recipient: Leadership in Mentoring**, *American Chemical Society* (**2023**)
• **Selected for ACS New Faculty Workshop (Fully Funded)**, *American Chemical Society* (**2023**)
• **CAS Future Leaders Top 100 Program** by *American Chemical Society* (**2023**)
• **Baxter Young Investigator Awards**, *Baxter International Foundation* (**2022**)
• **American Chemical Society Postdoc to Faculty (P2F) Scholar**, *American Chemical Society* (**2022**)
• **Younger Chemists Committee Leadership Development Award**, *American Chemical Society* (**2022**)
• **Baxter Young Investigator Awards**, *Baxter International Foundation* (**2022**)
• **BMES UNITE Future Faculty Fellow**, *Biomedical Engineering Society* (**2021**)
• **Extended Editorial Advisory Board**, *Carbon Journal - Elsevier* (**2021**)
• **Outstanding Thesis in Carbon Science & Technology, 2nd place**, *Carbon Journal - Elsevier* (**2021**)
• **American Chemical Society PMSE Future Faculty Scholar**, *American Chemical Society* (**2021**)
• **Alexander *von* Humboldt Research Fellowship**, $100k, 2-year support, *Humboldt Foundation, Germany* (**2021**) (*Declined to start independent career at Texas Tech University*)
• **Selected Participant for NIH Clinical and Translational Research Program**, *National Institute of Health* (**2021**)
• **BMES Career Development Award**, *Biomedical Engineering Society* (**2020**)
• **BMES Midwest Graduate Speaker Exchange Award**, *Biomedical Engineering Society* (**2020**)
• **Outstanding Mentorship Award**, *WYSE Researchers Program, UIUC* (**2019**)
• **Bioengineering Teaching Excellence Award**, $2k, *Department of Bioengineering, UIUC* (**2019**)
• **Featured Research in Chemistry in Pictures: "*Aurora borealis*",** *C&EN Magazine* (**2018**)

• **Graduate College Travel Fellowship Awards**, $1k, *UIUC* (**2018, 2020**)
• **Summer Research Undergraduate Fellowship**, *UIUC* (**2014**)
• **Prof. A. K. Seal Undergraduate Academic Fellowship**, $0.5k, *IIEST Shipbur, India* (**2013-14**)
• **Outstanding Poster Award, 3rd place**, Metallum, *IIEST Shibpur, India* (**2013**)
• **Regional National Science Exhibition, 3rd place**, *Central Board of Secondary Education, India* (**2009**)
• **National Mathematical Olympiad Contest, Silver medal**, *All India Schools Mathematics Teachers Association* (**2008**)

PATENTS/DISCLOSURES.

- Srivastava, Indrajit; Bendele, Nathaniel; Harun, Asma. ***Systems and Methods for Forming Tumor-Mimicking Phantoms***. Provisional Patent filed on September 29, 2025. Serial Application No. US 63/890,208.
- Srivastava, Indrajit; Vasquez, Isabella. ***Protein-Polymer Nanoprobes for Near-Infrared II (NIR-II) Bioimaging***. Provisional Patent filed on May 14, 2025. Serial Application No. US 64/065,480.
- Srivastava, Indrajit; Vasquez, Isabella. ***Chemically Functionalized Albumin Nanoprobes Exhibiting Dual Receptor Targeting***. Invention disclosure under review by Texas Tech University, Disclosure No. TTU 2026-0013, December 15, 2025.

PUBLICATIONS LIST. (Google Scholar, Total citations = 2500, h-index = 27)

+ denotes co-first author, # denotes high school/undergraduate/graduate mentee from the Srivastava Lab, * denotes corresponding author, I.F. denotes Impact Factor

FROM TEXAS TECH UNIVERSITY.

2026.

(49) I. De Leon,[#] A. Harun,[#] **I. Srivastava***. **Design, Development, and Evaluation of Anatomically Tailored 3D-Printed Optical Phantoms for Near-Infrared Bioimaging**. [*Under Preparation*].

(48) Md. H. Rashid,[#] M. U. Maruf, T. Nations, D. Levitt, B. Koneru, Z. Ahmad, **I. Srivastava***. **Biomineralized Surface-Enhanced Raman Scattering Nanotags Encode Biomolecular Identity into Machine Learning-Resolvable Fingerprints.** ACS Applied Materials & Interfaces (2026) [***BioRxiv***]. **[I.F. = 7.5]**

(47) I. Vasquez,[#] L. Nash, Md. Shahriar, M. Mahenour,[#] J. Cao-Xue,[#] I. De Leon,[#] U. Bickel, C. Xu, S. Raghavan, **Indrajit Srivastava***. **Modular Albumin-Chaperoned NIR-II Nanofluorophores Enables Pan-Ovarian Cancer Imaging across Multiscale Tumor Models.** [*Under Review*] (2026) [***BioRxiv***].

(46) M. Mahenour,[+,#] A. Harun,[+,#] K. Herrera,[+,#] I. De Leon, Md. Hasnat Rashid, **Indrajit Srivastava***. **Architecture-Dependent Stability, Cellular Uptake, and Redox Modulation of Poly(p-Coumaric Acid) Hybrid Nanoparticles for Ovarian Carcinoma Interventions.** *ACS Nano Medicine* (2026) [***BioRxiv***].

(45) J. C. Head, H. McCulloch, I. Vasquez,[#] I. D. Matis, A. Kornegay, S. Nashwati, E. Gomez, L. Wolff, R. Haque, **I. Srivastava**, S. M. Usama.* **Carbon Nucleophile-Mediated Pyridine Ring-Opening Enables Polymethine-functionalized Cyanine 9.** [*Major Revision, Nature Communications*] [ChemRxiv].

(44) A. Harun,[#] I. Vasquez,[#] R. Posey, H. Bowman,[#] Z. Hong, J. Tropp,* **I. Srivastava***. **Rational Design and Development of Afterglow Nanoparticles for Image-Guided Interventions.** *Small Methods* (2026). [**I.F. = 9.1**]

(43) E. Gomez, M. Kodisana, **A. Harun,[#]** A. Kornegay, A. Cardenas-Rivera, Y. Li, D. Wherritt, M. A. Yaseen, K. Hanson, **I. Srivastava**, S. M. Usama. **Unsymmetrical Heptamethine Cyanines as a General Strategy to Construct Nonaggregating Fluorophores for Biomedical Imaging.** *Bioconjugate Chemistry* (2026) [*Chemrxiv*] **[I.F. = 4]**

2025.

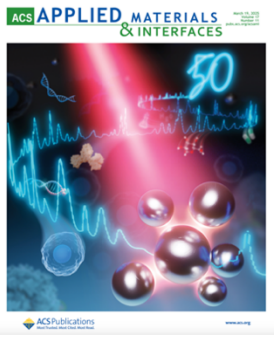
(42) N. Gill, R. Posey, B. Alfaro, H. Garza, J. Tran, K. M. Mahmud, A. C. Fritz, T. A. Oyshi, **I. Srivastava,** U. Bickel, J. Tropp.* **Multivariable Design of a Minimalist Conjugated Polymer Nanoparticles with Bright NIR-II Emission.** *Advanced Optical Materials* (2025). **[I.F. = 7.2]**

(41) I. Vasquez,[#] A. Harun,[#] R. Posey, R. Reddy, N. Gill, U. Bickel, J. Tropp, **I. Srivastava***. **Ultrabright NIR-II Nanoprobes for Ex Vivo Bioimaging: Protein Nanoengineering Meets Molecular Engineering**. [Invited] *ACS Nanoscience Au* (2025). *Spotlighted in the 2025 Rising Stars in Nanoscience editorial.* **[I.F. = 7.5]**

(40) R. Posey, N. Gill, D. Fernandez, L. G. F. Dos Santos, H. Garza, J. Tran, B. Alfaro, N. Payne, T. A. Oyshi, C. Cashman, B. Salinas, **I. Vasquez,[#]** A. Mdzinarishvili, **I. Srivastava**, U. Bickel, H. Lischka, J. Tropp*. **Tuning the Structure of Thienoisoindigo (TIG) Copolymers to afford Bright Near-Infrared Emission for Bioimaging Through Aggregation-Enhanced Emission**. [Invited] [Submitted] *Journal of Materials Chemistry B. Invited to the thematic issue "Materials developments in cancer therapeutics".* **[I.F. = 7]**

(39) A. Harun, [+,#] N. Bendele, [+,#] M. Ibrahim Khalil, I. Vasquez,[#] J. Djuanda,[#] R. Posey, G. Christopher, U. Bickel, V. Gruev, J. Tropp, P. Egan, **I. Srivastava***. "**3D Tumor-Mimicking Phantom Models for Evaluating Near-Infrared I/II Nanoparticles in Fluorescence-Guided Surgical Interventions**". *ACS Nano*, 19, 19757. (2025) [Press release by *Texas Tech Now*] **[I.F. = 15.8]**

(38) Isabella Vasquez,[+,#] Ruiyang Xue,[+] **Indrajit Srivastava***. "**Surface-Enhanced Raman Scattering Nanotags: Design Strategies, Biomedical Applications, and Integration of Machine Learning**". *WIRE Nanomedicine & Nanobiotechnology,* 17, 3, e70015. [Invited] (2025) **[I.F. = 8.6]**



(37) Li Lin, Luis M. Liz-Marzán, Ramon Alvarez-Puebla, Matt Trau, Jing Wang, Laura Fabris, Shikuang Yang, Jian-Feng Li, Jixiang Fang, Xinyuan Bi, Zhou Chen, Guokun Liu, Shuping Xu, Yikai Xu, Chunchun Li, Liangbao Yang, Jinqing Huang, Limei Tian, **Indrajit Srivastava**, Xiang Wang, Li Cui, Randy Carney, Sebastian Schlücker, Pavel Matousek, Wei Xie, Ming Li, Yitao Long, Xiao Xia Han, Aiguo Shen, Jiming Hu, Juergen Popp, Bin Ren, Shuming Nie, Bin Zhao, Xing Yi Ling*, Jian Ye*. "**Surface-Enhanced Raman Spectroscopy for Biomedical Applications: Recent Advances and Future Challenges**". *ACS Applied Materials & Interfaces* (2025) [Invited] [Selected as *Cover Art*] **[I.F. = 8.5]**
[*Landmark article commemorating the 50th anniversary of Surface-Enhanced Raman Spectroscopy (SERS) alongside top global experts in the field.]*

2024

(36) N. Bendele, [+,#] K. Kitamura, [+,#] I. Vasquez,[#] A. Harun,[#] M. Carroll,[#] **I. Srivastava***. "**Near-Infrared Afterglow Luminescence Amplification via Albumin Complexation of Semiconducting Polymer Nanoparticles for Surgical Navigation in Ex Vivo Porcine Models**". *Advanced Functional Materials* (2024) [Press release by *Texas Tech Now*] [Selected as *Frontispiece Cover*] **[I.F. = 19]**

(35) B. Rezaei,[+] A. Harun,[+#] X. Wu,[+] P. Lyer,[+] S. Ciannella,[+] S. Mostufa, I. H. Karampelas, J. Chalmers, **I. Srivastava,*** J. Gómez-Pastora,*, K. Wu.* "**Effect of Polymeric and Cell Membrane Coatings on Theranostic Applications of Nanoparticles: A Review**". *Advanced Healthcare Materials* (2024) **[I.F. = 10]**

(34) N. Gill, **I. Srivastava,*** J. Tropp.* "**Rational Design of NIR-II Emitting Conjugated Polymer Derived Nanoparticles for Image-Guided Cancer Interventions** ". *Advanced Healthcare Materials* (2024) **[I.F. = 10]**

(33) **I. Srivastava,*** R. Xue, H.-K. Huang, Z. Wang, J. Jones, **I. Vasquez,[#]** S. Pandit,[#] L. Lin, K. Flatt, V. Gruev, Y.-S. Chen,* S. Nie.* "**Biomimetic Membrane Protected Plasmonic Nanostructures as Dual-Modality Contrast Agents for Correlated SERS and Photoacoustic Detection of Hidden Tumor Lesions**". *ACS Applied Materials & Interfaces* (2024) **[I.F. = 8.5]**

BEFORE JOINING TEXAS TECH UNIVERSITY.

2023

(32) C. Chen, Z. Wang, J. Wu, Z. Deng, T. Zhang, Z. Zhu, Y. Jin, B. Lew, **I. Srivastava**, Z. Liang, S. Nie,* V. Gruev*. "**Bioinspired, Vertically Stacked, and Perovskite-Nanocrystal Enhanced CMOS Imaging Sensors for Resolving UV Spectral Signatures**''. *Science Advances* (2023) [Press release by *Grainger College of Engineering, University of Illinois*] **[I.F. = 11.7]**

(31) **I. Srivastava**,* B. Lew, Y. Wang, S. Blair, M. B. George, B. S. Hajek, S. Bangru, S. Pandit, Z. Wang,[#] J. Ludwig, K. Flatt, M. Gruebele, S. Nie,* V. Gruev*. "**Cell-Membrane Coated Nanoparticles for Tumor Delineation and Qualitative Estimation of Cancer Biomarkers at Single Wavelength Excitation in Murine and Phantom Models**''. *ACS Nano* (2023) This work was highlighted by the Illinois News Bureau and Illinois Public Media. **[I.F. = 15.8]**

(30) M. B. George,[+] B. Lew,[+] S. Blair, Z. Zhu, Z. Liang, **I. Srivastava**, A. Chang, H. Choi, K. Kim, S. Nie, S. Singhal, V. Gruev*. "**Bioinspired Color-Near Infrared Endoscopic Imaging System for Molecular Guided Cancer Surgery**''. *Journal of Biomedical Optics* (2023) This work was highlighted on the Cancer Center at Illinois website. **[I.F. = 3]**

(29) M. Alafeef, **I. Srivastava**, T. Aditya, D. Pan.* "**Carbon Dots: From Synthesis to Unraveling the Fluorescence Mechanism**". *Small* (2023) **[I.F. = 13]**

(28) P. Mukherjee,[+] **I. Srivastava**,[+] A. Ghosh, H. Jang, J. Pfister, R. Bhargava*, D. Pan*. "**Real-time Chemical Imaging of Carbon Dot Templated Tubulin-Polymerization**". (Submitted, Internal review manuscript available upon request from corresponding author)

(27) **I. Srivastava**, P. Moitra, K. Brent, S. Pandit, E. Altun, D. Pan.* "**Biodegradable and Switchable Near-Infrared Fluorescent Probes for Hypoxia Detection**". *Nanomedicine UK* (2023) **[I.F. = 5.5]**

2022

(26) **I. Srivastava**, R. Xue,[#] J. Jones, H. Rhee, K. Flatt, V. Gruev,* S. Nie*. "**Biomimetic Surface-Enhanced Raman Scattering (SERS) Nanoparticles with Improved Dispersibility, Signal Brightness, and Tumor Targeting Functions**". *ACS Nano* (2022) **[I.F. = 15.8]**
This work was highlighted on the Cancer Center at Illinois website.

2021

(25) **I. Srivastava**, P. Moitra, M. Fayyaz, S. Pandit, P. Fathi, H. Rezvani, K. Dighe, M. Alafeef, K. Vyoung,[#] M. Jabeen, D. Sar, S. Nie, J. Irudayaraj, D. Pan.* "**Rational Design of Surface-State Controlled Multi-Color Crosslinked Carbon Dots with Distinct Photoluminescence and Cellular Uptake Properties**". *ACS Applied Materials & Interfaces* (2021) **[I.F. = 8.5]**

(24) **I. Srivastava**, P. Moitra, D. Sar, K. Wang, M. Alafeef, J. Scott, D. Pan*."**Luminescence switching in polymerically confined carbon nanoparticles triggered by UV-light**", *Nanoscale* (2021) **[I.F. = 6.5]**

(23) A. S. Schwartz-Duval, R. Wen, **I. Srivastava**, P. Moitra, D. Pan*. "**A Simplistic Single-Step Method for Preparing Biomimetic Nanoparticles from Endogenous Biomaterials**", *ACS Applied Materials & Interfaces* (2021) **[I.F. = 8.5]**

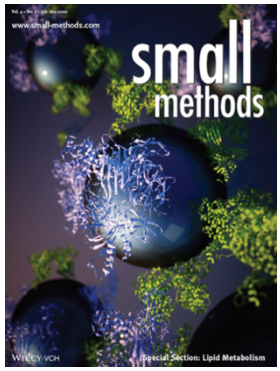
(22) H. A. Nguyen, **I. Srivastava**, D. Pan, M. Gruebele*."**Ultrafast Nanometric Imaging of Energy Flow Within and Between Single Carbon Dots**", *PNAS* USA (2021) **[I.F. = 9.4]**
Press release by *Illinois News Bureau*.

2020

(21) A. S. Schwartz-Duval, C. J. Konopka, P. Moitra, E. A. Daza, **I. Srivastava**, E. V. Johnson, T. L. Kampert, S.Fayn, A. Haran, L. W. Dobrucki, D. Pan*."**Intratumoral Generation of Photothermal Gold Nanoparticles through a Vectorized Biomineralization of Ionic Gold**", *Nature Communications* (2020) **[I.F. = 14.7]**
Press release by *University of Maryland Baltimore County*.

(20) M. Alafeef, **I. Srivastava**, D. Pan*."**Machine-learning for Precision Breast Cancer Diagnosis and Prediction of the Nanoparticles Cellular Internalization**", *ACS Sensors* (2020) **[I.F. = 8.3]**

(19) H. A. Nguyen,[+] **I. Srivastava**,[+] D. Pan*, M. Gruebele*."**Unraveling the Photoluminescence Mechanism of Carbon Dots with Sub-Particle Resolution**", *ACS Nano* (2020) **[I.F. = 15.8]**



(18) **I. Srivastava**, M. S. Khan, K. Dighe, Z. Wang, M. Alafeef, T. Banerjee, T. Ghonge, L. M. Grove,[#] R. Bashir, D. Pan*."**On-chip Electrical Monitoring of Real-time Soft and Hard Protein-Corona on Carbon Nanoparticles**", *Small Methods* (2020) [Selected as front cover] **[I.F. = 12.4]**
Press release by *Department of Bioengineering, University of Illinois at Urbana-Champaign*.

(17) **I. Srivastava**,[+] S. K. Misra,[+] S. Bangru, K. Boateng, J. A. N. T. Soares, A. S. Schwartz-Duval, A. Kalsotra, D. Pan*."**Complementary Oligonucleotide Conjugated Multi-Color Carbon Dots for Intracellular Recognition of Biological Events**", *ACS Applied Materials & Interfaces* (2020) **[I.F. = 8.5]**

2019

(16) S.Pandit,[#] T.Banerjee, **I. Srivastava**, S. Nie,* D. Pan*."**Machine Learning-Assisted Array-Based Biomolecular Sensing Using Surface-Functionalized Carbon Dots**", *ACS Sensors* (2019) **[I.F. = 8.3]**

(15) P. Fathi, J. S. Khamo, X. Huang, **I. Srivastava**, M. B. Esch, K. Zhang*, D. Pan*. "**Bulk-state and Single-particle Imaging are Central to Understanding Carbon Dot Photo-physics and Elucidating the Effects of Precursor Composition and Reaction Temperature**", *Carbon* (2019) **[I.F. = 10.5]**

(14) M. S. Khan,[+] K. Dighe,[+] Z. Wang, **I. Srivastava**, E. Daza, A. S. Schwartz-Duval, S. K. Misra, and D. Pan*."**Electrochemical digital Immunosensor with Enhanced Sensitivity for Detecting Human Salivary Glucocorticoid Hormone**", *Analyst* (2019) **[I.F. = 3.6]**

(13) **I. Srivastava**, J. Khamo, S. Pandit, P. Fathi, X. Huang, A. Cao, R. Haasch, S. Nie, K. Zhang,* D. Pan*."**Influence of Electron Acceptor and Electron Donor on the Photophysical Properties of Carbon Dots: A Comparative Investigation at the Bulk-State and Single-Particle Level**", *Advanced Functional Materials* (2019) **[I.F. = 18.5]**

(12) **I. Srivastava**,[+] D. Sar,[+] P. Mukherjee, A. S. Schwartz-Duval, Z. Huang, C. Jaramillo, A. Civantos, I. Tripathi, J. P. Allain, R. Bhargava, D. Pan*."**Enzyme-Catalyzed Biodegradation of Carbon Dots follow Sequential Oxidation in a Time-Dependent Manner**", *Nanoscale* (2019) **[I.F. = 6.5]**

2018

(11) F. Ostadhossein,[+] G. Vulugundam,[+] S. K. Misra,[+] **I. Srivastava**, D. Pan*."**Chirality Inversion on the Carbon Dot Surface via Covalent Surface Conjugation of Cyclic-Amino Acid Capping Agents**", *Bioconjugate Chemistry* (2018) **[I.F. = 4]**

(10) I. Tripathi, S. K. Misra, F. Ostadhossein, **I. Srivastava**, D. Pan*. "**Synthesis of Chiral Carbo- Nanotweezers for Enantiospecific Recognition and DNA Duplex Winding in Cancer Cells**", *ACS Applied Materials & Interfaces* (2018) **[I.F. = 8.5]**

(9) S. K. Misra,[+] **I. Srivastava**,[+] J. Khamo, V. V. Krishnamurthy, D. Sar, A. S. Schwartz-Duval, J. A. N. T. Soares, K. Zhang,* D. Pan*. "**Carbon Dots with Induced Surface Oxidation Permits Imaging at Single-Particle Level for Intracellular Studies**", *Nanoscale* (2018) **[I.F. = 6.5]**

Press release by *Department of Molecular & Cellular Biology, University of Illinois at Urbana-Champaign*.

(8) **I. Srivastava**, S. K. Misra, I. Tripathi, A. S. Schwartz-Duval, D. Pan*. "**In Situ Time-Dependent and Progressive Oxidation of Reduced State Surface Functionalities at the Nanoscale of Carbon Nanoparticles for Polarity Driven Multiscale Near-Infrared Imaging**", *Advanced Biology* (2018) **[I.F. = 4]**

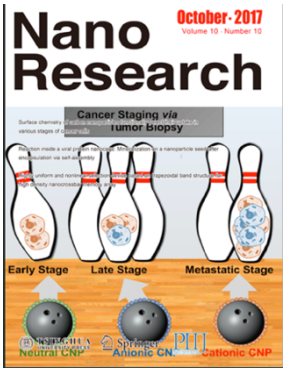
(7) M. S. Khan,+ K. Dighe,+ Z. Wang, **I. Srivastava**, E. Daza, A. S. Schwartz-Duval, J. Ghannam, S. K. Misra, D. Pan*. "**Detection of Prostate-Specific Antigen (PSA) in Human Saliva using an Ultra-Sensitive Nanocomposite of Graphene Nanoplatelets with Diblock-co-polymers and Au Electrodes**", *Analyst* (2018) **[I.F. = 3.5]**

(6) D. Sar,+ **I. Srivastava**,+ S. K. Misra, F. Ostadhossein, P. Fathi, D. Pan*. "**Copper-Catalyzed Syntheses of Pyrene-Pyrazole Pharmacophores and Structure-Activity Studies for Tubulin Polymerization**", *ACS Omega* (2018) **[I.F. = 4.1]**

2017

(5) T. L. Kampert, S. K. Misra, **I. Srivastava**, I. Tripathi, and D. Pan*. "**Phenotypically Screened Carbon Nanoparticles for Enhanced Combinatorial Therapy in Triple-Negative Breast Cancer**" *Cellular and Molecular Bioengineering* (2017) **[I.F. = 2.3]**

(4) S. K. Misra,+ **I. Srivastava**,+ I. Tripathi, E.Daza, F.Ostadhossein, D.Pan*."**Macromolecularly Caged Carbon Nanoparticles for Intracellular Trafficking via Switchable Photoluminescence**", *Journal of American Chemical Society* (2017) **[I.F. = 14.5]**
Press release by *Grainger College of Engineering, University of Illinois at Urbana-Champaign*.



(3) **I. Srivastava**,+ S. K. Misra,+ F. Ostadhossein, E. A. Daza, J. Singh,# D. Pan*. "**Surface Chemistry of Carbon Nanoparticles Functionally Select their Uptake in Cancer Cells of Different Stages**", *Nano Research* (2017) [Selected as Front Cover] **[I.F. = 9.5]**

2013-2015

(2) S. K. Misra, X. Wang, **I. Srivastava**, M. K. Imgruet, R. W. Graff, A. Ohoka, T. L. Kampert, H. Gao*, D. Pan*. "**Combinatorial Therapy for Triple Negative Breast Cancer Using Hyperstar Polymer-Based Nanoparticles**". *Chemical Communications* (2015) **[I.F. = 6.2]**

(1) B. Kartick, **I. Srivastava**, S. K. Srivastava*. "**Green Synthesis of Graphene**", *Journal of Nanoscience and Nanotechnology* (2013) **[I.F. = 2]**

ORAL TALKS.

1. [**Invited**] 'Light that Lingers: NIR-I Afterglow Nanoprobes for Brighter, Deeper Bioimaging', Department of Chemistry, University of Texas at El Paso, El Paso, TX (**2025**)
2. 'Ultrabright NIR-II Fluorescent Nanoprobes Chaperoned by Albumin Enable Pan-Ovarian Imaging in Multi-Scale Cancer Models', Women's Cancer/Women's Health at Biomedical Engineering Society National Meetings, San Diego, CA (**2025**)

3. [**Invited**] 'Light that Lingers: NIR-I Afterglow Nanoprobes for Brighter, Deeper Bioimaging', Department of Chemistry, University of Texas at San Antonio, San Antonio, TX (**2025**)
4. [**Invited**] 'Light that Lingers: NIR-I Afterglow Nanoprobes for Brighter, Deeper Bioimaging', Department of Chemistry, University of Houston, Texas, TX (**2025**)
5. [**Invited**] 'Leveraging Bio-Nanotechnology on Improving Healthcare', The WelchX Retreat, The Welch Foundation, Houston, TX (**2025**)
6. [**Invited**] 'Exploring Bio-Nano Interactions in Cancer Bioimaging', Honors Work in Progress, Honors College, Texas Tech University, Lubbock, TX (**2025**)
7. [**Invited**] 'Protein-Coated Afterglow Nanoprobes for Image-Guided Cancer Surgery', WCOE Research Day, Lubbock, TX (**2025**)
8. [**Invited**] 'Near-Infrared Afterglow Luminescence Amplification via Albumin Complexation of Semiconducting Polymer Nanoparticles for Surgical Applications', Special Session on Novel Applications of Polymeric Materials at American Chemical Society National Meetings, Denver, CO (**2024**)
9. [**Invited**] 'Nanotechnology Meets Nature: Leveraging Bioinspired Nanosensors for Disease Diagnostics', Texas Center for Comparative Cancer Research (TC3R), Amarillo, TX (**2024**)
10. [**Invited**] 'Nanotechnology Meets Nature: Leveraging Bioinspired Nanosensors for Disease Diagnostics', Department of Electrical & Computer Engineering, Texas Tech University, Lubbock, TX (**2024**)
11. [**Invited**] 'Cell-Membrane Coated Nanosensors for Disease Diagnostics', One Health Research Club, Texas Center for Comparative Cancer Research, Amarillo, TX (**2023**)
12. [**Invited**] 'Nanotechnology Meets Nature: Leveraging Bioinspired Nanosensors for Disease Diagnostics', Department of Chemistry & Biochemistry, Texas Tech University, Lubbock, TX (**2023**)
13. [**Invited**] "Engineering Tunable Biomimetic Nanosensors for Image-Guided Therapeutic Interventions Rapid Disease Diagnostics", Department of Biological and Agricultural Engineering, Louisiana State University, Baton Rouge, LA (**2023**)
14. [**Invited**] "Nature-Inspired Biomimetic Nanosensors for Image-Guided Therapeutic Interventions and Early Disease Diagnostics", Department of Biomedical Engineering, New Jersey Institute of Technology, Newark, NJ (**2023**)
15. [**Invited**] "Engineering Tunable Biomimetic Nanosensors for Rapid Disease Diagnostics and Image-Guided Interventions", Department of Mechanical Engineering, Texas Tech University, Lubbock, TX (**2023**)
16. "Biomimetic Plasmonic Nanostars with Enhanced Surface-Enhanced Raman Scattering and Photoacoustic Imaging Features for Ultrasensitive Image-Guided Surgery", Biomedical Engineering Society Annual Meeting, San Antonio (**2022**)
17. [**Award Talk**] "Rational Design & Precise Modulation of Nanoparticles for Multi-Scale Biological Applications", PMSE Future Faculty Symposium, American Chemical Society, San Diego (**2022**)
18. "Biomimetic SERS nanoparticles coated with red blood cell membranes with improved dispersibility for early disease detections", American Chemical Society, San Diego (**2022**)
19. [**Invited**] "Rational Design & Precise Modulation of Nanoparticles for Multi-Scale Biological Applications", American Chemical Society Future Faculty Rapid Fire Talks, Virtual (**2021**)

20. [**Award Talk**] "Connecting the Dots in Carbon Dots: Rational Design & Precise Modulation of Nanoparticles for Multi-Scale Biological Applications", Biomedical Engineering Society's UNITE Future Faculty Webinar, Virtual (**2021**)
21. "Biodegradable, Photothermally Responsive, Near-Infrared Fluorescent Carbon Dot Probes For Hypoxia Detection", American Chemical Society, Philadelphia, PA (**2020**) Cancelled due to COVID-19
22. [**Award Talk**] "Next-Generation Multi-Color Carbon Dots: Comprehensive Understanding of their Photophysics Subsequent Use in Biomedical Applications", Department of Biomedical Engineering, Northwestern University, Evanston, IL (**2020**)
23. "Biodegradable, Photothermal-Responsive, Near-Infrared Fluorescent Carbon Dot Probes for Hypoxia Detection", American Vacuum Society, Urbana, IL (**2019**)
24. "On-Chip Electrical Monitoring of Real-time of "Soft" and "Hard" Protein Corona Formation", Bioengineering Graduate Student's Symposium, Urbana, IL (**2019**)
25. "Controlled Intra-particulate Surface Cross-linking Synthesis of Multi-Color Carbon Dots from a Single Source", American Chemical Society, Orlando, FL (**2019**)
26. "Intracellular Cytotoxic Peptide Release Triggered by In Situ Hybridization of Complementary DNA-Conjugated Multicolor Carbon Dots", American Chemical Society, Orlando, FL (**2019**)
27. "Lipase-Catalyzed Enzymatic Biodegradation of Carbon Dots Follow Sequential Oxidation Pathways", American Chemical Society, Orlando, FL (**2019**)
28. "Real-time Monitoring of" Soft" and "Hard" Protein Corona in Carbon Dots *via* a Microfluidic Setup", American Chemical Society, Orlando, FL (**2019**)
29. [**Invited**] "Triggered Intracellular Cytotoxic Peptide Release by In Situ Hybridization of Complementary DNA Conjugated Multi-Color Carbon Dots". Lightning Talk Competition at Bioengineering Graduate Student Seminar, Urbana IL (**2018**)
30. "Macromolecularly Caged Carbon Nanoparticles for Intracellular Tracking *via* Switchable Photoluminescence", American Chemical Society, New Orleans, LA (**2018**)
31. [**Invited**] "In Situ Time-Dependent and Progressive Oxidation of Reduced State Surface Functionalities at the Nanoscale of Carbon Nanoparticles for Polarity Driven Multiscale Near-Infrared Imaging", UIUC MRL Fall Biological Conference, Urbana, IL (**2017**)
32. "Feasibility of selecting carbon nanoparticles based on cancer stages as a function of surface properties", Midwestern Universities Analytical Chemistry Conference, BMES Midwest Biomedical Engineering Regional Conference, Champaign, IL (**2016**)

CONTRIBUTED ORAL/POSTER PRESENTATIONS.

1. [**Poster**] I. Vasquez, M. Shahriar, N. Bendele, A. Harun, U. Bickel, C. Xue, **I. Srivastava**. "Albumin-Chaperoned Semiconducting Polymer Nanoparticles with Improved NIR-II Signal Brightness Enables Pan-Ovarian Tumor Imaging". *2025 Welch Research Conference*, Houston, TX, (**2025**)
2. [**Oral**] I. Vasquez, A. Harun, R. Posey, R. Reddy, N. Gill, U. Bickel, J. Tropp, I. Srivastava. "Ultrabright NIR-II Nanoprobes for Ex Vivo Deep Tissue Bioimaging: Protein Nanoengineering Meets Molecular Engineering." Podium Presentation, 2025 BMES National Meetings, San Diego, CA (**2025**).

3. [**Oral**] A. Harun, N. Bendele, …, I. Srivastava. "3D Tumor-Mimicking Phantom Models for Assessing NIR-I/II Nanoparticles in Fluorescence-Guided Surgical Interventions." Podium Presentation, 2025 BMES National Meetings, San Diego, CA (**2025**).
4. [**Poster**] P. Peyton, H. Bowman, I. Vasquez, A. Harun, **I. Srivastava**. "Polymer-Lipid Nanoparticles Using Drug-Dye Interactions for Improved Cancer Theranostics." 2025 BMES National Meetings, San Diego, CA (**2025**).
5. [**Poster**] A. K. Khatri, M. H. Rashid, **I. Srivastava**. "Machine Learning-Driven Analysis of Surface-Enhanced Raman Scattering (SERS) Spectra for Multi-Faceted Disease Diagnostics." 2025 BMES National Meetings, San Diego, CA (**2025**).
6. [**Poster**] M. H. Rashid, A. K. Khatri, I. Srivastava. "Biomineralized SERS Nanotags for Multi-Faceted Disease Diagnosis." 2025 BMES National Meetings, San Diego, CA (**2025**).
7. [**Poster**] I. Vasquez, N. Bendele, J Cao-Xue, **I. Srivastava**. "Light that Lingers: NIR-I Afterglow Nanoprobes for Brighter, Deeper Bioimaging." 2025 BMES National Meetings, San Diego, CA (**2025**).
8. [**Poster**] R. Reddy, I. Vasquez, **I. Srivastava**. "NIR-II Nanorpobes for Image-Guided Surgery." 2025 BMES National Meetings, San Diego, CA (**2025**).
9. [**Poster**] I. Vasquez, M. Shahriar, N. Bendele, A. Harun, U. Bickel, C. Xue, **I. Srivastava**. "Albumin-Chaperoned Semiconducting Polymer Nanoparticles with Improved NIR-II Signal Brightness Enables Pan-Ovarian Tumor Imaging". *2025 Undergraduate Research Conference*, Lubbock, TX, (**2025**)
10. [**Poster**] P. Peyton, H. Bowman, I. Vasquez, A. Harun, **I. Srivastava**. "Polymer-Lipid Nanoparticles Using Drug-Dye Interactions for Improved Cancer Theranostics." *2025 Undergraduate Research Conference*, Lubbock, TX, (**2025**)
11. [**Poster**] A. K. Khatri, M. H. Rashid, **I. Srivastava**. "Machine Learning-Driven Analysis of Surface-Enhanced Raman Scattering (SERS) Spectra for Multi-Faceted Disease Diagnostics." *2025 Undergraduate Research Conference*, Lubbock, TX, (**2025**)
12. [**Poster**] I. De Leon, A. Harun, I. Vasquez, H. Jones, N. Shandersky, **I. Srivastava**. "3D-Bioprinted Tumor Phantoms to aid in Fluorescence Image-Guided Surgery." *2025 Undergraduate Research Conference*, Lubbock, TX, (**2025**)
13. [**Poster**] E. Bridges, I. Vasquez, **I. Srivastava**. "Interplay of Proteins & Semiconducting Polymers on Afterglow Luminescence Behavior." *2025 Undergraduate Research Conference*, Lubbock, TX, (**2025**)
14. [**Oral**] A. Harun, I. Vasquez, R. Posey, M. H. Rashid, U. Bickel, J. Tropp, **I. Srivastava**. "Protein-Chaperoned & Thiophene Modified Nanoprobes for NIR-II Ex Vivo Deep Tissue Bioimaging." *2025 Texas Tech Annual Biological Sciences Symposium (TTABSS)*, Lubbock, TX, (**2025**)
15. [**Poster**] I. Vasquez, M. Shahriar, N. Bendele, A. Harun, U. Bickel, C. Xue, **I. Srivastava**. "Albumin-Chaperoned Semiconducting Polymer Nanoparticles with Improved NIR-II Signal Brightness Enables Pan-Ovarian Tumor Imaging". *2025 Texas Tech Annual Biological Sciences Symposium (TTABSS)*, Lubbock, TX, (**2025**)
16. [**Poster**] P. Peyton, H. Bowman, I. Vasquez, A. Harun, **I. Srivastava**. "Polymer-Lipid Nanoparticles Using Drug-Dye Interactions for Improved Cancer Theranostics." *2025 Texas Tech Annual Biological Sciences Symposium (TTABSS)*, Lubbock, TX, (**2025**)
17. [**Poster**] M. H. Rashid, A. K. Khatri, I. Srivastava. "Biomineralized SERS Nanotags for Multi-Faceted Disease Diagnosis." *2025 Texas Tech Annual Biological Sciences Symposium (TTABSS)*, Lubbock, TX, (**2025**)

18. [**Poster**] I. Vasquez, M. Shahriar, N. Bendele, A. Harun, U. Bickel, C. Xue, **I. Srivastava**. "Albumin-Chaperoned Semiconducting Polymer Nanoparticles with Improved NIR-II Signal Brightness Enables Pan-Ovarian Tumor Imaging". *2025 Whitacre College of Engineering Research Day*, Lubbock, TX, (**2025**)
19. [**Poster**] A. Harun, C. McNatt, N. Bendele, J. Djuanda, **I. Srivastava**. "Protein-Based Nanoparticles for Pre- and Post-Operative Image-Guided Surgical Intervention of Tumor Metastases." *2025 Whitacre College of Engineering Research Day*, Lubbock, TX, (**2025**)
20. [**Poster**] M. H. Rashid, A. K. Khatri, I. Srivastava. "Biomineralized SERS Nanotags for Multi-Faceted Disease Diagnosis." *2025 Whitacre College of Engineering Research Day*, Lubbock, TX, (**2025**)
21. [**Poster**] I. Vasquez, M. Shahriar, N. Bendele, A. Harun, U. Bickel, C. Xue, **I. Srivastava**. "Albumin-Chaperoned Semiconducting Polymer Nanoparticles with Improved NIR-II Signal Brightness Enables Pan-Ovarian Tumor Imaging". *2024 Biomedical Engineering Society National Meetings, Baltimore, MD* (**2024**)
22. [**Poster**] A. Harun, C. McNatt, N. Bendele, J. Djuanda, **I. Srivastava**. "Protein-Based Nanoparticles for Pre- and Post-Operative Image-Guided Surgical Intervention of Tumor Metastases." *2024 Biomedical Engineering Society National Meetings, Baltimore, MD* (**2024**)
23. [**Poster**] K. Kitamura, N. Bendele, I. Vasquez, A. Harun, **I. Srivastava**. "Protein-Conjugated Semiconducting Polymer Nanoparticles with Improved Afterglow Emission and Deep Tissue Imaging Capabilities." *2024 Undergraduate Research Conference*, Lubbock, TX, (**2024**)
24. [**Poster**] C. McNatt, A. Harun, N. Bendele, J. Djuanda, **I. Srivastava**. "Protein-Based Nanoparticles for Pre- and Post-Operative Image-Guided Surgical Intervention of Tumor Metastases." *2024 Undergraduate Research Conference*, Lubbock, TX, (**2024**)
25. [**Poster**] I. Vasquez, A. Harun, K. Kitamura, **I. Srivastava**. "Enhanced NIR-I Signal Brightness and Tumor Targeting of Albumin-Chaperoned Semiconducting Polymer Nanoparticles Enables Pan-Ovarian Imaging in Murine and Phantom Models." *2024 Undergraduate Research Conference*, Lubbock, TX, (**2024**)
26. [**Poster**] N. Bendele, J. Djuanda, **I. Srivastava**. "Rational Design, Development, and Optimization of 3D-Printed Tumor Cell-Mimicking Phantoms for Near-Infrared I/II Fluorescence-Guided Surgical Procedures." *2024 Undergraduate Research Conference*, Lubbock, TX, (**2024**)

ACADEMIC AND PROFESSIONAL SERVICES.

Appointments.

- Texas Center for Comparative Cancer Research (TC3R), **Faculty Member** (2023 – Present)

Committee Service.

- TTUHSC School of Medicine Lubbock MD/E Interviews, **Admissions Committee Member** (2024 – Present)
- TTU Department of Mechanical Engineering, **Undergraduate Programs Committee Member** (2024 – Present)

Conference Chairing Service.

- Session Co-Chair for the 'Cardiac Regeneration – I' – Biomedical Engineering Society National Meetings, San Diego CA (**2025**)
- Session Co-Chair for the 'Immunomodulatory Drug Delivery System' – Biomedical Engineering Society National Meetings, San Diego CA (**2025**)
- Session Co-Chair for the 'Novel Applications of Polymeric Materials' – American Chemical Society National Meetings, Denver CO (**2024**)
- Session Co-Chair for the 'AI/ML-Guided Biomaterials Synthesis & Design' – Biomedical Engineering Society National Meetings, Baltimore MD (**2024**)
- Session Co-Chair for the 'Cancer Mechanobiology Session' – Biomedical Engineering Society National Meetings, Seattle WA (**2023**)
- Conference Abstract Reviewer for Biomedical Engineering Society National Meetings (**2023, 2024, 2025**)
- AHA SURE Abstract Reviewer for AHA Scientific Sessions (**2025**)

Student Service.

- TTU Department of Mechanical Engineering Oral Qualifier Committee: Md. Ibrahim Khalil, A.K.M. Ahasun Habib, Hashem Sarkar, K C Bhaskar.
- Doctoral Thesis Committee: Bikash Bhattarai (Mechanical Engineering, TTU), Rutwik Joshi (Chemical Engineering, TTU)

***Ad Hoc* Journal Review.** Reviewer (~15 per year) for *ACS Nano*, *Advanced Materials*, *Advanced Science*, *Advanced Therapeutics*, *JACS*, *Angewandte Chemie*, *Biosensors & Bioelectronics, ACS Applied Materials & Interfaces*, *Chemistry of Materials*, *WIREs Nanomedicine & Nanobiotechnology, Nature Biomedical Engineering, PNAS, Transactions on Biomedical Engineering*, *Bioengineering and Translational Medicine*, *ACS Applied Nano Materials*, *ACS Applied Bio Materials*, *New Journal of Chemistry, RSC Advances*.

***Ad Hoc* Grant Proposal Review.**

- Grant Reviewer and Panel Member, NSF GRFP (**2023, 2024**)
- Grant Reviewer, AHA AIREA (**2025**)
- Grant Review, National Institute of Health: Early Career Reviewer (**2025**)

Judging and Reviewing Service.

- Poster Session Faculty Judge at Undergraduate Research Conferences (URC), TTU (**2024**, **2025**)
- Poster Session Judge at Undergraduate Research Symposium, UIUC (**2017**, **2018**, **2019**)
- Poster Session Judge at Engineering Open House, UIUC (**2019**, **2023**)

MENTORSHIP

AT TEXAS TECH UNIVERSITY.

Current cohort at TTU.

Doctoral and MS Thesis Students (5).

1. **Asma Harun**, PhD Candidate (**2023 – Present**)
   Awards: *Best Poster Award at TTU WCOE Research Day 2025, First Place at ME Department's Graduate Student Poster Competition 2024, Graduate Student Research Support Award 2024.*
2. **Md. Hasnat Rashid**, PhD Student (**2024 – Present**)
3. **Mahenour Megahed**, PhD Student (**2025 – Present**)
   Award: *Annual Graduate Student Research Poster Competition 3rd Place*
4. **Namrata Ghimire,** MS Thesis Student (**2026 – Present**)
5. **Connor McFarlane,** MS Thesis Student (**2026 – Present**)

Undergraduate Students (3).

6. **Itzel DeLeon**, Mechanical Engineering, AHA Undergraduate Research Assistant (**2024 - Present**)
   Award: *LEDA Outstanding Commercialization Award winner 2025*
7. **Kaylee Herrera**, Biology, AHA Undergraduate Research Assistant (**2025 - Present**)
   Awards: *AHA SURE Fellow 2026*
8. **Alan Ramirez,** Biology, TrUE/CISER Scholar (**2025 - Present**)

High School Students (2).

9. **Ellie Chong**, Clark Scholar (**2026**)
10. **Raaghav Nandana,** Independent Study High School Intern (**2026**)

Former students at TTU.

Undergraduate Students (8).

1. **Isabella Vasquez**, Chemistry & Biochemistry, URS @ Honors College and AHA Undergraduate Research Assistant (**2023 – 2026**) – *Starting Ph.D. in Bioengineering at Rice University*
   Awards: ***NSF GRFP 2026****, Koh Family Foundation Fellowship (Declined), Distinguished Graduate Student Assistantship, DGSA (Declined), Institute of One Health Poster Session 3rd Place, AHA Scientific Session SURE Poster Session 2nd Place, 2025 Welch Research Conference Undergraduate Poster Session 2nd Place,* ***Barry Goldwater Scholarship 2025****, AHA SURE Fellow 2025, Outstanding Poster Award in Health Track at URC 2025, Hulda W. Marshall Chemistry Endowed Scholarship 2025, Zelda Doris Bond Scholarship 2025, Texas Tech University Presidential Merit Scholarship 2022-2025, Overall Top Winner Award at TTU WCOE Research Day 2025, Outstanding Undergraduate Researcher 2024, Jeanette and Joe Dennis Endowed Scholarship 2024.*
2. **Wunika Gomwalk,** Electrical Engineering, URS Scholar @ Honors College (**2026 -2026**)
3. **Victoria Vargas,** Chemical Engineering, AHA Undergraduate Research (**2026 - 2026**)
4. **Elizabeth Agunbiade**, Chemical Engineering, Independent Study (**2025**)
5. **Eli Bridges**, Biology, URS Scholar @ Honors College (**2024-2025**)
6. **McKenzie Carroll**, Biology, Postbac. Researcher (**2024-2024**)
7. **Kennedy Norkiewicz**, Chemistry & Biochemistry, TrUE Scholar (**2024-2024**)
8. **Caitlyn McNatt**, Chemistry & Biochemistry, TrUE Scholar (**2023-2024**)
9. **Ken Kitamura**, Chemistry & Biochemistry, TrUE Scholar (**2023-2024**)
10. **Nathaniel Bendele**, Chemistry & Biochemistry, Independent Study (**2023-2024**)
    Awards: *LEDA Outstanding Commercialization Award Winner 2024, Outstanding Undergraduate Researcher Award 2024*
11. **Jonathan Djuanda**, Chemistry & Biochemistry, Independent Study (**2023-2024**)

High School Students (3).

12. **Hannah Bowman**, Anson L. Clark Scholar Program (**2024**) – *Starting Undergrad. at Caltech*
13. **Nevea Casteneda**, ERIE Internship (**2024**)
14. **Ruhananand Reddy**, ERIE Internship (**2025**) – *Starting Undergrad. at Texas A&M*
15. **Jerry Cao-Xue**, Clark Scholar (**2025**) – *Starting Undergrad. at Harvard University*

AT UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN.

M.S. & Ph.D. Students (5).

1. **Rushi Patel**, M.S. in Bioengineering (**2016-2017**)
   Currently D.O. medical student at Marian University, Indianapolis
2. **Hamza Ahmed**, M. Eng. in Bioengineering (**2017-2018**)
   Currently Digital Health Sales Engineer at Alcon

3. **Dustin Park**, M. Eng. in Bioengineering (**2017-2018**)
   Currently Senior Validation Engineering at Komodo Health
4. **Subhendu Pandit**, Ph.D. in Chemistry (**2018-2022**)
   Currently Data Scientist at Lam Research
5. **Ruiyang Xue**, Ph.D. in Materials Science (**2020-2022**)
   Currently Scientist at Takeda Pharmaceuticals

Undergraduate Students (10).

- **Jamie Jones**, B.S. in Bioengineering (**2022-2023**)
  Currently Ph.D. candidate at University of Wisconsin-Madison
- **Hyunjoon Rhee**, B. S. in Industrial Engineering (**2020-2021**)
  Currently Project Management Engineer @ Samsung Semiconductor
- **Katherine Vyoung**, B. S. in Materials Science & Engineering (**2019-2020**)
- **Kyle Ritchie**, B. S. in Bioengineering (**2019-2020**)
- **Hannah Laverty**, B. S. in Bioengineering (**2019-2020**)
- **Kevin Wang**, B.S. in Materials Science & Engineering (**2017-2019**) **joined MEng Program in Bioinstrumentation, UIUC.*
- **Anleen Cao**, B. S. in Materials Science & Engineering (**2017-2019**)
  Currently Regulatory Affairs Specialist at Harry's.
- **Lauren Grove**, B. S. in Bioengineering (**2016-2020**)
  Currently Associate Quality Assurance Manager at Medline Industries Inc.
- **Jasleena Singh**, B. S. in Bioengineering (**2016-2017**)

Summer Trainees Mentored via Campus Outreach Programs (5).

1. **Kurtis Brent**, NSF Frontier in Biomedical Imaging REU (**2019**) **Ph.D. student at UCB/UCSF Bioengineering Program*
2. **Banan Garada**, SpHERES High School Research Program @ UIUC (**2019**) **joined undergrad. at UCLA Computer Science & Engineering*
3. **Makhai Smith**, SpHERES High School Research Program @ UIUC (**2019**)
4. **Alhena Bello-Cordova**, SpHERES High School Research Program @ UIUC (**2019**)
5. **Sam Hotchkiss**, ResearcHStart @ Cancer Center at Illinois (**2016**) **joined undergrad. at Vanderbilt University*

TEACHING EXPERIENCES

1. **Course Instructor** *September 2026 – Present*
   Texas Tech University, Lubbock, TX, USA
   Course: ME 5358: Biomaterials
   Class size: 28 students (17 in-person and 11 online)
   Average Ratings: TBD

2. **Course Instructor** *September 2023 – May 2026*
   Texas Tech University, Lubbock, TX, USA
   Course: ME 2322: Engineering Thermodynamics I,
   Class size: 65 students (average)
   Average Ratings: 4.2/5, 4.6/5, 4.45/5, 4.3/5

3. **Graduate Teaching Assistant** *August 2018 - December 2018*
   University of Illinois at Urbana-Champaign, IL, USA

Instructor: Prof. Shuming Nie,
Course: BIOE 598: Surgical Technologies,
Class size: 35 students
**Selected as the 2018-19 Bioengineering Department TA of the Year Award.*

4. **Graduate Teaching Assistant** *August 2018 - December 2018*
University of Illinois at Urbana-Champaign, IL, USA
Instructor: Prof. Dipanjan Pan,
Course: BIOE 598: Imaging & Therapeutic Probes,
Class size: 48 students

5. **Graduate Teaching Assistant** *January 2020 - May 2020*
University of Illinois at Urbana-Champaign, IL, USA
Instructor: Prof. Michael Insana,
Course: BIOE 198: Biomedical Data Analysis,
Class size: 14 students

**Nominated as the 2019-20 Bioengineering Department TA of the Year Award.*

6. **Graduate Teaching Assistant** *January 2020 - May 2020*
University of Illinois at Urbana-Champaign, IL, USA
Instructor: Prof. Sergei Maslov,
Course: BIOE 310: Computational Tools for Biological Data,
Class size: 58 students

PROFESSIONAL MEMBERSHIPS

2023- Present *Early Career Member, American Heart Association (AHA)*
2023- Present *Early Career Member, Biomedical Engineering Society (BMES)*
2018 – 2023 *Student Member, Biomedical Engineering Society (BMES)*
2023 – Present *Premium Member, American Chemical Society (ACS) and Polymeric Materials Science & Engineering Division Member*
2017 – 2023 *Student Member, American Chemical Society (ACS) and Polymeric Materials Science & Engineering Division Member*