

*Curriculum Vitae*

**Suri Saranathan Iyer, Ph.D**

*Professor and Chair, Department of Chemistry,  
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**(A) EDUCATION**

B.S. Chemistry. Honors 1987 -1990. Fergusson College, Pune, India. 1990.

M.S. Organic Chemistry (Hons), Indian Institute of Technology, Bombay, India. 1992.

Ph.D. Chemistry, Indiana University, Bloomington, Indiana, USA. 2000.

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**(B) PROFESSIONAL CREDENTIALS**

- August 2023** Professor and Chair, Department of Chemistry, University of Massachusetts, Lowell, MA. *Research: Point of care diagnostics for infectious agents.*
- May 2016** Professor, Department of Chemistry, Georgia State University, Atlanta, GA. *Research: Point of care diagnostics for infectious agents.*
- Jan 2012 - Apr 2016** Associate Professor, Department of Chemistry, Georgia State University, Atlanta, GA. *Research: Carbohydrates as unique recognition molecules for toxins and pathogens.*
- Aug 2010 - Dec 2011** Associate Professor, Department of Chemistry, University of Cincinnati, Cincinnati, OH. *Research: Carbohydrates as unique recognition molecules for toxins and pathogens.*
- Sep 2004 - Aug 2010** Assistant Professor, Department of Chemistry, University of Cincinnati, Cincinnati, OH. *Research: Carbohydrates as unique recognition molecules for toxins and pathogens.*
- 2002-2004.** Postdoctoral Research Associate, Bioscience Division, Los Alamos National Laboratory, Los Alamos, NM. *Research: Fluorescently labeled glycans for differentiation of influenza.*
- 2001-2002.** Instructor, Emory School of Medicine, Atlanta, GA. *Research: Synthesis of heparin sulfate oligosaccharides as anticoagulants.*
- 2000-2001.** Postdoctoral Research Associate, Emory School of Medicine, Atlanta, GA. *Research: Synthesis of hyaluronan di- and oligosaccharides.*
- 1993-2000.** Doctor of Philosophy in Chemistry, Indiana University, Bloomington, IN. *Dissertation: C-3 Symmetric single site metal alkoxides for the ring opening polymerization of lactides and lactones.*
- 1990-1992.** M. S. Organic Chemistry (Hons), Indian Institute of Technology, Mumbai, India *Thesis: Synthesis of chalcogenides as models for the Fischer-Tropsch reactions.*
- 1987-1990.** B.S. Chemistry (Hons), Fergusson College, Pune, India.
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Time commitment: 1 summer month.

Aims: The goals of this proposal are to develop diagnostics for IBD.

PI: Suri S. Iyer

NIAID R33 \$ 1,272,729 07/01/2014-06/30/2019

Title: Development of point of care diagnostics for Norovirus. The goals of this proposal are to develop glycan based diagnostics for norovirus infections.

PI: Suri S. Iyer.

Co-PI: Jan Vinje, CDC and Christine Moe, Emory University

NSF REU 287,790\$ 06/01/2013-05/31/2017

Title: Summer research experiences for undergraduates at Georgia State University The goals of this proposal are to provide an opportunity for 10-12 undergraduates to gain valuable research experience in the summer.

PI: Suri S. Iyer

Co-PI: Dabney W. Dixon.

USDA-NIFA Norocore \$100,000 06/01/2014 – 05/31/2017.

Title: Glycans for norovirus. The goals of this proposal are to develop glycopolymers to grow norovirus.

PI: Suri S. Iyer

NIAID R21/R33 AI100246-01 \$ 382,742. 06/01/2012-05/31/2014. *Development of point of care diagnostics for Norovirus.* The goals of this proposal are to develop glycan based diagnostics for norovirus infections.

PI: Suri S. Iyer.

Co-PI: Jan Vinje, CDC and Christine Moe, Emory University

NSF CAREER proposal. CHE-0845005. \$575,000. 08/01/2009-07/31/2014. *Tailored Glycoconjugates for the precise detection of toxins and pathogens.* The goals of this proposal are i. *Research:* Structure activity relationship studies between a library of synthetic glycans and different strains of toxin and pathogens and ii. *Education:* Train high school, undergraduate, graduate student and K-12 teachers nano and glycoscience.

PI: Suri S. Iyer.

USDA SBIR Phase I award \$ 100,000.06/01/2012-02/28/2013. *Real-time Detection of Food-borne Pathogens and Toxins.* The goals of this Phase I proposal awarded to Dr. Melanie Tomczak, Principal Scientist, Biosensor Division, UES, Inc., Dayton, Ohio. 45432 is to evaluate the ability of synthetic glycans to capture *E.coli O157:H7* in various environmental samples. As part of the subcontract, the Iyer group provided high affinity ligands, assist in conjugation of ligands to the biosensor, optimize assay conditions and test and validate the performance of the biosensor.

PI: Melanie Tomczak, UES, Inc.

Subcontract: Suri S. Iyer

FY 2010 Ohio Third Frontier Wright Projects Program \$2,956,675 “The Ohio Center for Microfluidic Innovation (OCMI) - New Products and Competitive Manufacturing Spanning Emerging Biomedical, Electronics, and Sensor Applications “

The goals of this proposal is to develop a center for microfluidics to create products, which is expected to spur growth in state of Ohio.

PI: Jason Heikenfeld.

Co-PIs: Suri S. Iyer and 4 other faculty.

IDCAST, Institute for Development and Commercialization of Advanced Sensor Technology (Ohio Department of Development) \$780,000. 2/26/2007-2/26/2013. *Instrumentation Grant for the Development*

*and Commercialization of Advanced Sensor.* The major goals of this proposal are to purchase instrumentation to translate basic research into commercial products.

PI: William R. Heineman and Andrew Steckl.

Co-PI: Suri S. Iyer, Jason Heckenfield, H. Brian Halsall, William B. Connick, Carl J. Seliskar

NIAID. U01-AI075498 \$1,206,954. 08/01/2007-03/01/2012. *Glycoconjugate based diagnostics for bacterial toxins.*

This is a RO1 type proposal to develop point-of-care diagnostics for Class B toxins. (Ricin, Botulinum, Shiga, Clostridium perfringens epsilon toxins and Staphylococcus enterotoxin B)

PI: Alison A. Weiss (toxin biology and development of in vitro assays)

Co-PI: Suri S. Iyer (ligand development)

NSF SBIR phase I Subcontract. \$ 30,000. 01/01/2010-07/01/2010 *Nanoparticle sensor for detection of E.coli in real-world and real-time conditions.*

The goals of this Phase I proposal awarded to Dr. Melanie Tomczak, Principal Scientist, Biosensor Division, UES, Inc., Dayton, Ohio. 45432 is to evaluate the ability of synthetic glycans to capture *E.coli* O157:H7 in various environmental samples. As part of the subcontract, the Iyer group will provide high affinity ligands, assist in conjugation of ligands to the biosensor, optimize assay conditions and test and validate the performance of the biosensor.

PI: Melanie Tomczak, UES, Inc.

Subcontract: Suri S. Iyer

URC Summer Faculty Fellowship. \$ 8,000. 07/01/2005-09/01/2005. *Tailored High Affinity Multivalent Saccharides for the Precise Detection of Pathogens.*

PI: Suri S. Iyer.

NSF 0532495 National Science Foundation. \$ 200,000. 03/01/2006-03/01/2008. *NUE: Integration of Nanoscale Science and Engineering into Undergraduate Curricula.*

PI: Tom Mantei.

co-PI: Suri S. Iyer, Leigh Smith, Vesselin Shanov, John Bickle, Andrew Steckl, Mark J. Schulz.

URC interdisciplinary grant. \$25,000. 09/01/2006-09/01/2007. *Development of diagnostics and therapeutics for Shiga toxin.*

PIs: Alison A. Weiss and Suri S. Iyer.

UC Institute of Nanoscience and Nanotechnology. \$ 30,000. 01/01/2007-12/31/2007. *Quantum Dot-Glyconanoparticles for Multiplex Detection of Pathogens.*

PI: Suri S. Iyer.

co-PI: Alison A. Weiss.

UC Institute of Nanoscience and Nanotechnology. \$ 30,000. 01/01/2008-12/31/2008. *A New Microfluidic Sensor for Nanoparticle Sizing and Separations.*

PI: Ian Papautsky

co-PI: Dionysios D. Dionysiou and Suri S. Iyer

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## (E) PATENTS AND PUBLICATIONS

### Patents:

1. Electrochemical methods and compounds for the detection of enzymes **Patent number: 10408783**. Abstract: Disclosed are compositions and methods for the electrochemical detection of enzymes, such as enzymes that are indicative of disease, disorders, or pathogens, such as viruses, bacteria, and fungi, or other disorders. These methods can be used in point-of-care diagnostic assays for the detection of disease, disorder, or pathogen (e.g., to identify the strain of pathogen infecting a patient in a healthcare setting). The electrochemical methods described herein can also be used to

assess the susceptibility of a pathogen to an antipathogen drug. Also provided are probes suitable for use in conjunction with the methods described herein. **Filed: June 1, 2015 Granted Date of Patent: September 10, 2019** Assignee: Georgia State University research foundation, inc. Inventors: Suri Saranathan Iyer, Abasaheb Dhawane, Yun He, Xiaohu Zhang, Hieu Dinh, Mugdha Vasireddi, Joyce Sweeney

2. Synthetic ligands for the differentiation of closely related toxins and pathogens, **Patent number: 9045516**. Abstract: Synthetic ligand compounds and methods of differentiating between Shiga toxin 1 and Shiga toxin 2 are disclosed herein. Another embodiment includes a kit for differentiating between Shiga toxin 1 and Shiga toxin 2. Assay systems and methods for providing an assay are also provided for herein. Assignee: University of Cincinnati. **Filed: April 16, 2008, granted Date of Patent: June 2, 2015** Inventors: Suri Saranathan Iyer, Duane Michael Hatch, Ramesh Ratan Kale, Alison Ann Weiss, Shantini Dodampe Gamage, Colleen M. McGannon.

#### Manuscripts under revision/in preparation:

3. Jia, T. and Iyer, S. S. "Cap and release" assays using palladium embedded in mesoporous silica nanoparticles, *manuscript in revision*.

4. Jia, T., Saikam, V., Luo Y., Sheng, X., Fang J., Natekar, J., Kumar, M. and Iyer S. S., Combining Bioorthogonal Chemistry with Fluorescent Silica Nanoparticles for the Ultrasensitive Detection of HIV-1 p24 Antigen, *manuscript in preparation*.

5. Saikam V., Liu, D., Sheng, X. and Iyer, S. S. HIV-1 p24 detection and quantification using mesoporous silica nanoparticles, *manuscript in preparation*.

#### Manuscripts in print:

6. Liu, D., Merlin, D. and Iyer, S.S. Inflammatory Bowel Disease Biomarkers, submitted to *Medicinal Research Reviews*, Inflammatory bowel disease biomarkers, *Medicinal Research Reviews* 42 (5), 1856-1887

7. Iyer S. S. and Kumar, M., ASSURED-SQVM Diagnostics for COVID-19: Addressing the Why, When, Where, Who, What and How of Testing, review article, *Expert Review of Molecular Diagnostics*, **2021**, 4, 349-362.

8. Sheng, X., Liu, D., Gamage, S. K., Luo, Y., Viennois, E., Merlin, D. and Iyer, S.S. Point-of-Care Monitoring of Colitis using Intestinal Alkaline Phosphatase in Inflammatory Bowel Disease, submitted to *ACS Sensors*, **2021**, 6, 698-702. doi: 10.1021/acssensors.0c02177

9. Luo, Y., Jia, Fang, J., Liu, D., Saikam, V., Sheng, X., and Iyer, S.S. Rapid, user-friendly and inexpensive detection of Azidothymidine, *Analytical and Bioanalytical Chemistry*, **2021**, 413, 1999-2006. doi: 10.1007/s00216-021-03168-z.

10. Liu, D., Viennois, E., Fang, J., Merlin D, and Iyer, S.S. Towards Point-of-Care Diagnostics to Monitor MMP-9 and TNF- $\alpha$  Levels in Inflammatory Bowel Disease, *ACS Omega*, **2021**, 6, 6582-6587. doi: 10.1021/acsomega.0c05115.

1. Kirby, A.E., Kienast, Y., Aldeco, M. et al. Snow Mountain Virus recovery by synthetic human histoblood group antigens is heavily influenced by matrix effects. *Sci. Rep.* **2020**, 10, 4661. <https://doi.org/10.1038/s41598-020-60639-6>

2. Liu, D., Cui, X., Dhawane A. D., Chivukula, V. and Iyer S. S., Fluorescent sialic derivatives for the specific detection of influenza viruses, *Biorg. Med. Chem. Lett.*, **2019**, 29 (24), Article 126773. <https://doi.org/10.1016/j.bmcl.2019.126773>.

3. Das A., Xikai, C. Chivukula V., and Iyer. S. S., Rapid detection of enzymes, viruses and bacteria using glucose meters, *Anal. Chem.* **2018**, 90, 11589–11598.

4. Yang Y., He H.J., Chang H., Yu Y., Yang M.B., He Y., Fan Z.C., Iyer S.S, Yu P. Multivalent oleanolic acid human serum albumin conjugate as nonglycosylated neomucin for influenza virus capture and entry inhibition. *Eur J Med Chem.* **2018**, 143, 1723-1731.

5. Cui, X., Das, A., Dhawane, A. N., Sweeney, J. Zhang, X., Chivukula, V. and Iyer S. S., Highly specific and rapid glycan based amperometric detection of influenza viruses. *Chemical Science*, **2017**, 8, 3628 and mentioned in C&E news, *C&E News release*, **March 2017**, Volume 95, Issue 12, pg 7

6. Das A., Gurule B.P., Dhawane A. N. and Iyer S.S., Synthesis of biotinylated bivalent zanamivir analogs as probes for influenza viruses. *Heterocyclic Communications*, **2017**, 23, 181-186.
7. Yang Y., Hai-Peng L., Qun Y., Mei-Bing Y., De-Min W., Tian-Wei J., Hao-Jie H., Yun H., Hai-Xia X., Iyer S. S., Zhen-Chuan F., Xin M., and Yu P., Multivalent S-sialoside protein conjugates block influenza hemagglutinin and neuraminidase. *Carb. Res.* **2016**, 435, 68-75
8. Zhang W-Q, Yun H., Qun Y., Hai-Peng L., De-Min W., Xiao-Bin L., Jian L., Xin M., Hai-Juan Q., Lucchi N.W., Udhayakumar V., Iyer S. S., Yang Y. and Yu P. Polyvalent effect enhances diglycosidic antiplasmodial activity. *Eur J Med Chem.*, **2016**, 121, 640-648.
9. Yang Z-L., Zeng X-F., Liu H-P., Yu Q., Meng X., Yan Z-L., Fan Z-C., Xiao H-X, Iyer S. S., Yang Y. and Yu P., Synthesis of multivalent difluorinated zanamivir analogs as potent antiviral inhibitors. *Tet. Lett.*, **2016**, 57, 2579-2582.
10. Gurale, B. P.; He, Y.; Cui, X.; Dinh, H.; Dhawane A. N.; Lucchi N.W. ; Venkatachalam, U. and Iyer, S.S. Towards the Development of next generation of Rapid Diagnostic Test: Synthesis of Glycophosphatidylinositol (GPI) analogues of Plasmodium falciparum and immunological characterization, *Bioconjugate Chem.*, **2016**, 27, 2886–2899. DOI: 10.1021/acs.bioconjchem.6b00542
11. Dhawane, A.N. ; Diez-Valcarce, M. ; Gurale, B.P. ; Dinh, H.; Vinjé, J. and Iyer, S.S. Synthesis and Evaluation of Biotinylated Bivalent HistoBlood Group Antigens for Capturing Human Noroviruses. *Bioconjugate Chem.*, **2016**, 27, 1822–1829
12. He, Y.; Yang, Y. and Iyer, S. S. Neuraminidase Resistant Sialosides for the Detection of Influenza Viruses. *Bioconjugate Chem.*, **2016**, 27, 509-517
13. Gurale, B. P.; Dhawane, A. N.; Cui, X.; Das, A.; Zhang, X. and Iyer, S.S. Indirect Detection of Glycosidases Using Amperometry. *Anal Chem.* **2016**, 88, 4248-4253.
14. Zhang, X.; Dhawane A. B.; Sweeney, J.; He, Y.; Vasireddi, M. V.; Iyer, S. S. Electrochemical Assay to Detect Influenza Viruses and Measure Drug Susceptibility, *Angew. Chem. Int. Ed. Engl.* **2015**, 54, 5929–5932.
15. Dinh, H.; Zhang, X.; Sweeney, J.; Yang, Y.; He, Y.; Dhawane, A.; Iyer, S. S. *Anal Chem* **2014**, 86, 8238.
16. Yang Y.; He, Y.; Li, X.; Dinh, H. and Iyer S. S. Bifunctional thiosialosides inhibit influenza virus. *Bioorg. Med. Chem. Lett.* **2014**, 24, 636-643.
17. Yosief. H.O.; Iyer S. S. and Weiss A. A. Binding of Pk-trisaccharide analogs of Globotriaosylceramide to Shiga toxin variants, *Infection & Immunity*, **2013**, 81, 2753-2760.
18. Yosief, H. O.; Weiss A. A. and Iyer, S. S. Capture of uropathogenic Escherichia coli using synthetic glycan ligands specific for the Pap-pilus. *ChemBioChem*, **2013**, 14, 251-259.
19. Mahajan, S. S and Iyer S. S. Binding of ricin to  $\beta$ -galactoside analogues using different glycan platforms. *J. Carb. Chem.* **2012**, 31, 447-465.
20. Guo, X.; Kulkarni, A. A.; Doepke, A.; Halsall, H. B.; Iyer, S. S and Heineman, W. R. Carbohydrate-Based Label-Free Detection of Escherichia coli ORN 178 Using Electrochemical Impedance Spectroscopy. *Anal. Chem.*, **2012**, 84, 241–246.
21. Kulkarni, A. A.; Weiss, A. A. and Iyer S. S. Detection of Carbohydrate Binding Proteins Using Magnetic Relaxation Switches. *Anal. Chem.*, **2010**, 82, 7430-7435.
22. Kulkarni, A. A.; Fuller, C.; Korman, H.; Weiss, A. A. and Iyer, S. S. Glycan Encapsulated Gold Nanoparticles Selectively Inhibit Shiga Toxins 1 and 2. *Bioconjugate Chem.*, **2010**, 21, 1486-1493.
23. Flagler, M. J.; Mahajan S. S.; Kulkarni, A. A.; Iyer, S. S. and Weiss, A. A. Comparison of binding platforms yields insights into receptor binding differences between Shiga toxins 1 and 2. *Biochemistry*, **2010**, 49, 1649-1657.
24. Millen, S. H.; Lewallen, D. M.; Herr, A. B.; Iyer, S. S. and Weiss A. A. Identification and Characterization of the Carbohydrate Ligands of Pertussis Toxin by Glycan Microarray and Surface Plasmon Resonance. *Biochemistry*, **2010**, 49, 5954-5967.
25. Kulkarni, A. A.; Weiss, A. A. and Iyer, S. S. Glycan Based High Affinity Ligands for Toxins and Pathogens, *Invited Review, Medicinal Research Review*, **2010**, 30, 327-393.
26. Lewallen, D. M., Siler, D. and Iyer S. S. Factors Affecting Protein-Glycan Specificity: Effect of spacers and protein-glycan incubation time. *ChemBioChem*, **2009**, 10, 1486-1489.
27. Hatch, D. M.; Weiss A. A.; Kale, R. R. and Iyer S. S. Biotinylated bi and tetra antennary glycoconjugates for *Escherichia coli* detection. *ChemBiochem*, **2008**, 9, 2433-2442.

28. Kale, R. R.; Mukundan, H.; Price, D. N.; Harris, J. F.; Lewallen, D. M.; Swanson, B. I.; Schmidt, J. G. and Iyer, S. S. Detection of Intact Influenza Viruses using Biotinylated Biantennary S-Sialosides. *J. Am. Chem. Soc.* **2008**, *130*, 8169–8171.
29. Kale, R. R.; McGannon, C. M.; Fuller-Schaefer, C.; Hatch, D. M.; Gamage, S. D.; Flagler, M. J.; Weiss, A. A. and Iyer, S. S. Differentiation between structurally homologous Shiga I and Shiga II toxins using synthetic glycoconjugates. *Angew. Chem. Int. Ed. Engl.* **2008**, *47*, 1265–1268. This work has been highlighted in *Chemical and Engineering News*, **2008**, *86*, 42 in the Science and Technology Concentrates section.
30. Shiju, N. R., Kale, R. R., Iyer, S. S. and Gulians V. V. <sup>13</sup>C Isotope Labeling Study of Propane Amoxidation over M1 Phase Mo–V–Te–Nb–O Mixed Oxide Catalyst. *J. Phys. Chem. C*, **2007**, *111*, 18001–18003.
31. Weiss, A. A. and Iyer, S. S. *Feature article*. Glycomics aims to interpret the third molecular language of cells. *Microbe* **2007**, *2*, 489–497.
32. Kale, R. R.; Clancy, C. M.; Vermillion, R. M.; Johnson, E. A. and Iyer, S. S. Synthesis of soluble multivalent glycoconjugates that target the Hc region of botulinum neurotoxin A. *Bioorg. Med. Chem. Lett.* **2007**, *17*, 2459–2464.
33. Rele, S. M.; Iyer, S. S. and Chaikof, E. L. Hyaluronan-based glycoclusters as probes for chemical glycobiology. *Tet. Lett.* **2007**, *48*, 5055–5060.
34. Rele, S. M.; Iyer, S. S.; Baskaran, S. and Chaikof, E. L. Design and Synthesis of Dimeric Heparinoid Mimetics. *J. Org. Chem.*, **2004**, *69*, 9159–9170.
35. Iyer, S. S.; Anderson, A. S.; Reed, S.; Swanson B. I. and Schmidt, J. G. Synthesis of orthogonal end functionalized oligoethylene glycols of defined lengths. *Tet. Lett.*, **2004**, *45*, 4285–4288.
36. Iyer, S. S.; Rele, S. M. and Chaikof, E. L. Ring opening metathesis polymerization of hyaluronan disaccharide mimetics. *Chem. Commun.*, **2003**, 1518–1519.
37. Iyer, S. S.; Rele S. M. ; Baskaran, S. and Chaikof, E. L. Design and synthesis of hyaluronan-mimetic gemini disaccharides. *Tetrahedron*, **2003**, *59*, 6931–6938.
38. Rele S. M.; Iyer, S. S. and Chaikof, E. L. Homodimerization of hyaluronan and heparan sulfate derivatives by olefin metathesis reaction. *Tet. Lett.* **2003**, *44*, 89–91.
39. Benedikt, G. M.; Goodall, B. L.; Iyer, S. S.; McIntosh III, L. H.; Mimna, R.; Rhodes, L. F.; Day, C. S. and Day, V. W. Synthesis, Solution Dynamics, and X-ray Crystal Structure of Bis(2,4,6-tris(trifluoromethyl)-phenyl)(1,2-dimethoxyethane)nickel. *Organometallics*, **2001**, *20*, 2565–2569.
40. Antelmann, B.; Chisholm, M.H.; Iyer, S.S.; Huffman, J.C.; Navarro-Llobet, D.; Pagel, M.; Simonsick W.J. and Zhong, W. Molecular Design of Single Site Catalyst Precursors for the Ring-Opening Polymerization of Cyclic Ethers and Esters -II. Can Ring-Opening Polymerization of Propylene Oxide Occur by a Cis-Migratory Mechanism? *Macromolecules*, **2001**, *34*, 3159–3175.
41. Chisholm, M. H.; Eilerts, N. W.; Huffman, J. C.; Iyer, S.S.; Pacold, M. and Phomphrai, K. Molecular Design of Single-Site Metal Alkoxide Catalyst Precursors for Ring-Opening Polymerization Reactions Leading to Polyoxygenates. 1. Polylactide Formation by Achiral and Chiral Magnesium and Zinc Alkoxides, (3- $\mu$ )MOR, Where L = Trispyrazolyl- and Trisindazolylborate Ligands. *J. Am. Chem. Soc.*, **2000**, *122*, 11845–11854.
42. Kalamarides, H. A.; Iyer, S. S.; Lipian, J.; Rhodes, L. F. and Day. C. S. Pentafluoroaryl Transfer from Tris(pentafluorophenyl)boron Hydrate to Nickel. Synthesis and X-ray Crystal Structure of (PPh<sub>2</sub>CH<sub>2</sub>C(O)Ph)Ni(C<sub>6</sub>F<sub>5</sub>)<sub>2</sub>. *Organometallics*, **2000**, *19*, 3983–3990.
43. Chisholm, M. H.; Iyer, S. S. and Streib, W. E. Chiral C<sub>2</sub> and C<sub>1</sub> symmetric (cyclooctane-1,5-diyl)bis(2-pyrazolyl)borate complexes of potassium and thallium. Preparation, structures and solution behavior. *New J. Chem.*, **2000**, 393–398.
44. Chisholm, M. H.; Huffman J. C. and Iyer, S. S. Some studies of the substitution chemistry of [Rh<sub>2</sub>(OAc)<sub>2</sub>(CH<sub>3</sub>CN)<sub>4</sub>][BF<sub>4</sub>]<sub>2</sub> with monodentate and bidentate tertiary phosphines. *J. Chem. Soc., Dalton Trans.*, **2000**, 1483–1489.
45. Chisholm, M. H.; Iyer, S. S.; McCollum, D. G.; Pagel, M. and Werner-Zwanziger, U. Microstructure of Poly(lactide). Phase-Sensitive HETCOR Spectra of Poly(meso-lactide), Poly(rac-lactide), and Atactic Poly(lactide). *Macromolecules*, **1999**, *32*, 963–973.

46. Chisholm, M. H.; Cotton, F. A.; Daniels, L. M.; Folting K.; Huffman, J. C. Iyer, S. S.; Lin, C.; Macintosh, A. M. and Murillo, C. A. Compounds in which the  $\text{Mo}_2^{4+}$  unit is embraced by one, two or three formamidinate ligands together with acetonitrile ligands, *J. Chem. Soc., Dalton Trans.*, **1999**, 1387-1392.

47. Chisholm, M. H.; Iyer, S. S.; Matison, M. E.; McCollum, D. G. and Pagel, M. Concerning the stereochemistry of poly(lactide), PLA. Previous assignments are shown to be incorrect and a new assignment is proposed, *Chem. Commun.*, **1997**, 1999-2000.

48. Chisholm, M. H.; Huffman, J. C.; Iyer, S. S. and Lynn, M. A. Nitro-substituted benzoates of dimolybdenum. The  $\text{Mo}^{4+}$   $\delta$  to ligand charge transfer band. *Inorganic Chim. Acta (invited)*, **1996**, 243, 283-293.

### **Book Chapters:**

1. Shanov, V. N.; Yeo-Heung, Y.; Smith, L.; Jadhav, S.; Hoang, T. B.; Gorton, A.; Mantei, T.; Bickle, J.; Paputsky, I.; Gerner, F.; Burdick, J. L.; Spatholt, A.; Dadhania, M.; Seth, G.; Schulz, M. J.; Iyer, S. S. Vertical Integration of Nanotechnology Education in Nanotechnology in Undergraduate Education, Pacheco, K. (Editor). *Invited. ACS Symposium Series, New York: Oxford University Press, 2010.*

2. Lewallen, D. M.; Hatch, D. M.; Iyer, S. S. Molecular recognition elements for toxin and pathogen detection. *Invited. Chemosensors: Principles, Strategies, and Applications*, Wang B. and Anslyn E. (Editors). *John Wiley & Sons 2011.*

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### **(F) INVITED SEMINARS AND CONFERENCES:**

40 total at conferences and institutions.

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### **(G) SERVICE:**

**PROFESSIONAL SERVICE:** Approximately 4-5 review panels per annum. Currently, I have continuous submission by NIH for serving on several review panels in the past 18 months. Continuous submission means that I do not have to submit standard RO1 and R21 proposals by the deadline.

1. Member, Study Section, ZRG1 IMST-D(30), October 19-20, 2021.
2. Member, Study Section, ZAI1-JP-A-S2, June 24, 2021.
3. Member, Study Section, ZAI1-LG-M (M2), April 7-8, 2021.
4. Member, Study Section, ZAI1-JP-W-S1, June 9, 2020.
5. Member, Study Section, ZAI-1-LR-A-M1, April 29, 2020.
6. Member, Study Section, ZRG1-IDM-V-12, March 26, 2020
7. Member, Study Section, ZRG1 IDM-V, November 14-15, 2019.
8. Member, Study Section, NSF, November 4-5, 2019.
9. Member, Study Section, NIH BCMB G-02, June 11-12, 2019.
10. Member, Study Section, Oklahoma Center for the Advancement of Science and Technology's (OCAST) Health Research program, May 19-20, 2019.
11. Member, Study Section, NSF, August 28, 2018.
12. Member, Study Section, BCBM-10 SBIR/STTR meeting, March 12, 2018.
13. Member, Study Section, BCBM-10 SBIR/STTR meeting, June 26, 2017.

14. Member, Study Section, Oklahoma Center for the Advancement of Science and Technology's (OCAST) Health Research program, May 21-22, 2017.
15. Member, Study Section, Special Emphasis, Diagnostics Review Committee (ZAI1-LR-M-M1) meeting, March 31, 2017.
16. Member, Study Section, BCBM-10 SBIR/STTR meeting, March 13, 2017.
17. Member, CHEMRAWN (Chemistry Research Applied to World Needs) Committee, International Union of Pure and Applied Chemistry (IUPAC), 2016 – present.
18. Judge, ABRCMS (Annual Biomedical Research Conference for Minority Students), Tampa, Florida, November 9-12, 2016.
19. Member, NIH study section, Special Emphasis panel, BCMB-G 02, November 17-18, 2016.
20. Member, NIH Study section, SBIR Panel, BCMB-10, November 7, 2016.
21. Member, Study Section, Oklahoma Center for the Advancement of Science and Technology's (OCAST) Health Research program, May 23-24, 2016.
22. Member, 2016 NSF Graduate Research Fellowship Program, January 19-22, 2016.
23. Member, NIH SBCA Study section, June 11-12, 2015.
24. Member, Study Section, Special Emphasis Panel/Scientific Review Group, 2015/05 ZAI1 LR-M (M2) meeting, March 11-12, 2015.
25. Member, Study Section, Special Emphasis Panel/Scientific Review Group, 2015/05 ZAI1 LR-M (M2) meeting, March 9-10, 2015.
26. Member, Study Section, Special Emphasis Panel, ZAI1 MFH-M (J1) 1 meeting, November 3-4, 2014.
27. Member, Study Section, Oklahoma Center for the Advancement of Science and Technology's (OCAST) Health Research program, May 18-19, 2014.
28. Member, Study Section, Special Emphasis Panel/Scientific Review Group, 2013/10 IMST S-10 meeting, June 3, 2014.
29. Member, NSF panel review, December 16-17, 2013.
30. Member, Study Section, Special Emphasis Panel, ZEB1 OSR-D(J2) S, November 6, 2013.
31. Member, Study Section, Oklahoma Center for the Advancement of Science and Technology's (OCAST) Health Research program, 2013, May 19-20, 2013.
32. Member, Study Section, Special Emphasis Panel/Scientific Review Group, 2012/10 ZEB1 OSR-B (O1) S meeting. 06/25/2012.
33. Member, Study Section, NIH-NIBIB Special Emphasis Panel, ZEB1 OSR - D(J2) Training (T32 and T35) and K Award Review Meeting, November 16, 2011.
34. Member, Study section, NIH-NIBIB 2011-01 Training (T32 and T35) and K Award Review Meeting, June 24, 2011.
35. Ad hoc Member, SBCA study section, June 15-16, 2011.
36. Member, Study section, NIH-NIBIB 2011-01 Training (T32 and T35) and K Award Review Meeting, November 18, 2010.
37. Member, Study Section, NIH-NIAID Special Emphasis Panel, ZAI1 LG-M (J2), September 29, 2010.
38. Member, Study section, NIH-NIAID Special Emphasis Panel, ZAI1 LG-M (J1), September 30, 2010.
39. Member, American Chemical Society, 1995-present.
40. Member, Society for Glycobiology, 2009

41. Coordinator for the ACS Project SEED, 2006-present. Project SEED is designed to encourage economically disadvantaged minority high school students to pursue career opportunities in the chemical sciences. We placed over 54 high school students over the past five years in various laboratories at Xavier University, University of Cincinnati and now at Georgia State University.
42. Ad-hoc reviewer of several journal articles (Journal of the American Chemical Society, Journal of Organic Chemistry, Analytical Chemistry, Bioorganic Medicinal Chemistry Letters, Organic Letters, Tetrahedron Letters) and proposals (NSF, Army Defense of Defense and Alzheimer Association)

#### **At Georgia State University:**

1. Graduate Director, Chemistry Department, June 2018-2021.
2. Associate Director of the Molecular Basis of Disease Program, March 2015- present.
3. Member, University Entrepreneurship committee, June 2017- current
4. Member, Executive Committee, College of Arts and Sciences, July 2017- 2019
5. Seminar for junior faculty on writing effective NSF Career proposals, every year since 2016.
6. Member, GSU Senate Planning and Development Committee, 2012-2015.
7. Member, GSU Senate Admissions and Standards Committee, 2012-2015.
8. Chair, Faculty search, Department of Chemistry, Georgia State University. Search initiated in August 2013. We successfully hired Dr. Gregory Poon as a junior faculty member in Fall 2015.
9. Member, CDT faculty search, 2013-2015.
10. Member of committees for 10-12 Ph.D. and Masters graduate students. (The number is set by the graduate director)
11. GSU internal grant reviewer since 2014.
12. Director of the NSF sponsored Research Experiences for Undergraduates Program, since 2013
13. Director of the American Chemical Society Project Seed program for high school students.

#### **At University of Cincinnati:**

14. Member of GINS new faculty hire committee, Department of Biological Sciences. New search initiated in Fall 2009. We successfully recruited Dr. Ishi Buffam to the faculty.
15. Member of the committee to review Ph.D. requirements for 2 years, 2005 and 2006.
16. Member of the Graduate recruiting committee for 5 years.
17. Member of the new faculty hire in 2007 and 2008. Dr. Hairong Gong was selected in 2007 and is a current faculty member in the Inorganic division. Two faculty members were selected in 2008. Dr. Eddie Merino is a current faculty member in the Biochemistry division and Dr. Neil Ayres is a member of the Organic division.
18. Member of the NMR faculty search committee in 2008. Dr. Keyang Ding was selected and currently is the manager of the departmental NMR facility.
19. Committee member or Chair of committee of 17 graduate students from 2004-present. Six from my group, five from research groups in Chemistry, three from the Department of Molecular Genetics, Biochemistry and Microbiology and one from Cincinnati Children's Hospital.
20. Member of the Department of Chemistry Morale committee in 2007 and Head of the Morale committee from 2008-2011.
21. Organized and chaired a 1-day symposium, "Carbohydrate Sensors" at the 237th American Chemical Society National Meeting & Exposition, Salt Lake City, Utah, March 21-23, 2009. This was the first symposium in the emerging field of glycan diagnostics. Scientists from varied backgrounds (Microbiology, Virology, Chemistry, Analytical Chemists, Biosensors) contributed to the talks at the conference.
22. Organized and chaired the 5th Annual Midwest Carbohydrate and Glycobiology symposium, October 2-3, 2009 at the Tangeman University Center, University of Cincinnati, Cincinnati, Ohio.
23. Co-organized and chaired a 1-day symposium, "Organic Chemistry: New Synthetic Methodologies" at the 41st Central Regional Meeting of the American Chemical Society, Cleveland, Ohio, May 20-23, 2009.

24. Hosted the 2007 Hans and Marlies Zimmer International In-Residence Scholar, Professor Mark von Itzstein, Director, Institute for Glycomics, Griffith University, Australia, from April 16-21, 2007. Professor von Itzstein is one of the leading scientists responsible for the design and synthesis of the anti-influenza drug, Relenza®, which has been approved for the treatment of influenza worldwide.
25. Judged several local and regional competitions, including the Cincinnatus fellowship 2005, Southwest Ohio Science Fest. 2005, Third Midwest Carbohydrate & Glycobiology Symposium held at Ohio State University, 2007 and University of Cincinnati Graduate Poster Competition 2008.

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## **(H) ADVISING/ GROUP:**

Over the past 14 years, I have >40 students ranging from postdoctoral fellows to high school students. Details are given below. (Students who has completed their non-thesis masters are not included)

### **POSTDOCTORAL FELLOWS, GRADUATE, UNDERGRADUATE AND HIGH SCHOOL STUDENTS:**

#### **i. Current group:**

1. Mr. Tianwei Jia, 3<sup>rd</sup> year Ph.D graduate student.
2. Ms. Xiaolin Zhang, 3<sup>rd</sup> year Ph.D graduate student.
3. Ms. Ying Luo, 3<sup>rd</sup> year Ph.D graduate student.
4. Ms. Jieqiong Fang, 2<sup>nd</sup> year Ph.D student.
5. Mr Andrew Browne, 2<sup>nd</sup> year student.

#### **ii. Former group members:**

1. Luong "Bei" Pham, undergraduate , 2018-2020, currently employed as a technician at a Chemical company.
2. Dr. Varma Saikam, postdoctoral fellow, 2019-2021, currently working as a postdoctoral fellow in a colleagues group.
3. Mr. Corey Andrews, Master student, graduated in Fall 2020.
4. Ms. Dandan Liu, my 11<sup>th</sup> Ph.D. graduate student, graduated in December 2020 and currently employed at a biotechnology company, Long Island, NY.
5. Ms. Sujani Gamage, graduate student, joined Dr. Suazette Mooring group
6. Ms. Amrita Das, my 10<sup>th</sup> Ph.D. currently at PMC, a diagnostics company.
7. Mr. Xikai Cui, my 9<sup>th</sup> Ph.D., currently at Affinity Research Chemicals, a contract research company.
8. Mr. Ebenezer Mengesha Agaro, masters student, in process of applying for M.D. degrees.
9. Mr. Ethan Stinchcomb, masters student, currently pursuing a Ph.D. at Yale University.
10. Mr. Chad Dotson, master's student, currently employed in industry.
11. Ms. Jordyn Ann Howard, undergraduate student, currently pursuing a Masters degree in France.
12. Dr. Hieu Dinh, Assistant Professor, Atlanta Metropolitan State College, collaborator.
13. Dr. Xiaohu Zhang, my 8<sup>th</sup> graduate student, currently at Medtronic as a research scientist.
14. Dr. Abasaheb Dhawane, postdoctoral fellow, 2012-2017, senior scientist, Acme Bioscience.
15. Ms. Joyce Sweeney, master student, currently a graduate student in the Institute of Biomedical Sciences, GSU.
16. Mr. Jiyao Yu, undergraduate student, 2nd year graduate student at Georgia Tech Chemistry Department.
17. Dr. Bharat Gurule, postdoctoral fellow, senior scientist, Chemgenes, Inc.
18. Dr. Mugdha Vasireddi, postdoctoral fellow, 2014-2015, research scientist, Department of Biology, GSU.
19. Dr. Hieu Dinh, my 7<sup>th</sup> Ph.D. student, assistant professor at Atlanta Metropolitan State College, Atlanta, GA.
20. Ms. Reba Williams, undergraduate student, 2013-2104, currently employed at CDC, Atlanta.
21. Dr. Yun He, my 6<sup>th</sup> Ph.D. student, 2009-2013, graduated from GSU, senior scientist, China.

22. Dr. Haielmicheal Yosief, my 5<sup>th</sup> Ph.D. student, 2008-2013, postdoctoral fellow at Dana Farber, Boston. (Since I moved to GSU, Dr. Yosief stayed behind at UC. I was still his de facto advisor, but since UC policies doesn't allow dual employment, Dr. David Smithrud became his advisor)
  23. Dr. Sujit S. Mahajan, my 4<sup>th</sup> Ph.D student, 2006 -2010, currently working at Innovations, LLC, Cincinnati, Ohio as an analyst/innovator.
  24. Dr. Ashish Kulkarni, my 3<sup>rd</sup> Ph.D. student, 2006-2010, assistant professor, University of Massachusetts, Amherst.
  25. Dr. Dan Lewallen, my 2<sup>nd</sup> Ph.D. student, 2006-2010, patent agent, Indianapolis.
  26. Mr. Duane M. Hatch, my 1<sup>st</sup> Ph.D. student, 2004-2009, assistant professor at Belmont University.
  27. Dr. Ramesh R. Kale, postdoctoral fellow, 2005-2007, currently CEO at a startup in India.
  28. Ms. Rebecca Vermillion, Masters student, 2004-2006, currently employed as a research chemist in Cleveland, Ohio.
  29. Mr. Shalyajit Jadhav, Masters student, 2005-2009, graduated from Tulsa University, OK.
  30. Mr. Justin Morrison, senior, undergraduate, 2006-2009, graduated with a MD from OSU.
  31. Mr. Mike Laugle, undergraduate, 2005-2007, graduated with a MD from UC.
  32. Ms. Lindsey Jamison, undergraduate, 2005, currently employed at P&G, Cincinnati, Ohio.
  33. Mr. Kenny Fields, graduate student, 2004, currently employed as a BS chemist, Girindus Chemical Company, Cincinnati, Ohio.
  34. Mr. Mike Brothers, 2006-2008, graduated from UIUC, Urbana Champaign, working in industry.
  35. Mr. David Siler, 2005-2008, graduated from Princeton, working in industry.
  36. Mr. Henry Korman, 2006-2009, graduated from UCSD, working at a startup.
  37. Ms. Tasha Batts, 2008, Summer REU student, graduated from UC.
  38. Ms. Tania Rivas, 2008, currently employed as a chemist, Cincinnati, Ohio.
  39. Ms. Stephany Jones, summer high school student 2007 and 2008, graduated from UC.
  40. Ms. Brittany Shepard, summer high school student 2006, graduated from UC.
  41. Mr. Peter Monaco, summer high school student 2008, graduated from UC.
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