CURRICULUM VITAE

John T. Yi, Ph. D

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EDUCATION

University of <u>Pittsburgh</u> , <u>Pittsburgh</u> , PA	May 2005
Doctor of Philosophy in Physical Chemistry	-
La Roche College, Pittsburgh, PA	May 1992
Bachelor of Science in Chemistry	
PROFESSIONAL EXPERIENCE	
Professor, Winston-Salem State University,	Jul. 17 – Present
Associate Professor, Winston-Salem State University,	Jul. 12 – Jun.17
Assistant Professor, Winston-Salem State University,	Aug. 06 – Jun. 12
Visiting Professor, National Institute of Standards and Te	chnology (NIST),
Boulder, CO	May-Jul. 16, 17, 18 &19
Gaithersburg, MD	Jul. 11
Collaborator: Dr. David F. Plusquellic	
Postdoctoral , Stanford University/	
Stanford Research Institute International,	Apr. 06 - Jul. 06
Supervisors: Professor Ronald K. Hanson/ Dr. Har	ald Oser
Postdoctoral, Ohio State University,	Mar. 05 - Apr. 06
Supervisor: Professor Terry A. Miller	-

Graduate Research Assistant, University of Pittsburgh, Aug. 98- Aug. 05 Advisor: Professor David W. Pratt

Award:

Masters Teaching Award (Winston Salem State University, 2015) Safford Award – Excellences in teaching (University of Pittsburgh, 2002)

RESEARCH

Publications:

- 1. Jose Arturo Ruiz-Santoyo, América Y. Torres-Boy, Josué A. Minguela-Gallardo, **John T. Yi**, Sergio A. Romero-Servín, David W. Pratt, and Leonardo Álvarez-Valtierra, "Rotationally resolved electronic spectrum of N-Methylcarbazole in the gas phase: A study of methyl group internal rotation", *J Mol. Struct.*, 2020 **1217**, 128282.
- 2. John T. Yi, Sergio Romero-Servin, Leonardo Álvarez-Valtierra, and David F. Plusquellic, "Rotationally resolved UV spectroscopy of the rotamers of indole-4-carboxylic acid: Evidence for charge transfer quenching", *J. Chem. Phys.*, 2020 152, 144307.

- 3. Michael Schneider, Martin Wilke, Marie-Luise Hebestreit, Jose Arturo Ruiz-Santoyo, Leonardo Alvarez-Valtierra, John T. Yi, W. Leo Meerts, David W. Pratt and Michael Schmitt, "Rotationally resolved electronic spectroscopy of the rotamers of 1,3-dimethoxybenzene" *Phys. Chem. Chem. Phys.*, 2017 19, 21364.
- 4. J. Arturo Ruiz-Santoyo, Josefin Wilke, Martin Wilke, John T. Yi, David Pratt, Michael Schmitt, and Leonardo Alvarez-Valtierra, "Electronic Spectra of 2- and 3-Tolunitrile in the Gas Phase I: A Study of Methyl Group Internal Rotation via Rovibronically Resolved Spectroscopy" *J. Chem. Phys.*, 2016 144, 044303.
- José Arturo Ruiz-Santoyo, Marcela Rodríguez-Matus, José Luis Cabellos, John T. Yi, David W. Pratt, Michael Schmitt, Gabriel Merino, Leonardo Álvarez-Valtierra, "Intramolecular Structure and Dynamics of Mequinol and Guaiacol in the Gas Phase. Rotationally Resolved Electronic Spectra of their S1 States", J. Chem. Phys., 2015 143, 094301.
- 6. J. W. Young, V. Vaquero-Vara, **John T. Yi**, G. Moreno-Vargas, L. Álvarez-Valtierra and D. W. Pratt, "Using high resolution electronic spectroscopy to probe the effects of ring twist on conjugation and electron transfer in 2-phenylindole and N-phenylcarbazole." *Phys. Chem. Chem. Phys.*, 2013 **15**, 10251.
- Pete Paul, Patrick Lawson, John T. Yi and Nathan Stump, "Diffuse reflectance investigation of the thermo decomposition of samarium trichloride hexahydrate" *Applied Spectroscopy*, 2012 66, 90.
- 8. John T. Yi, Christian Brand, Miriam Wollenhaupt, David W. Pratt, W. Leo Meerts, and Michael Schmitt, "Rotationally resolved electronic spectroscopy of biomolecules in the gas phase. Melatonin", *J. Mol. Spect.*, 2011 268, 115.
- 9. Leonardo Alvarez-Valtierra, David F. Plusquellic, **John T. Yi**, and David W. Pratt, "On the excited state dynamics of vibronic transitions. High resolution spectra of acenaphthene and its argon van der Waals complex in the gas phase" *J. Phys. Chem. A*, 2011 **115**, 9557.
- 10. Jinjun Liu, Ming-Wei Chen, Demitry Melnik, **John T. Yi** and Terry A. Miller, "The spectroscopic characterization of the methoxy radical. Part I. Rotationally Resolved $\tilde{A}^2A_{1-} X ^2E$ Electronic Spectra of CH₃O" *J. Chem. Phys.*, 2009 **130**, 74302.
- 11. Leonardo Alvarez-Valtierra, **John T. Yi**, and David W. Pratt. "Lifetime broadening in the rotationally resolved electronic spectra of dibenzothiophene, 2,5-diphenylfuran and 2,5-diphenyl-1,3,4-oxadiazole in the gas phase. Intersystem crossing dynamics in the statistical limit." *J. Phys. Chem. A*, 2009 **113**, 2261.
- 12. Leonardo Alvarez-Valtierra, **John T. Yi**, and David W. Pratt. "Rotationally resolved electronic spectra of 2- and 3-methylanisole in the gas phase. A study of methyl group internal rotation." *J. Phys. Chem. B*, 2006 **110**, 19914.
- 13. John T. Yi, Leonardo Alvarez-Valtierra, and David W. Pratt. "The rotationally resolved electronic spectra of fluorene, carbazole and dibenzofuran: Evidences of Herzberg-Teller vibrational coupling with S₂ electronic state." *J. Chem. Phys.*, 2006 **124**, 244302.
- 14. Cheolwha Kang, **John T. Yi**, and David W. Pratt. "Stark effects in the gas phase. Dipole moment of 7-azaindole in its ground and electronically excited states." *Chem. Phys. Let.*, 2006 **423**, 7.
- 15. Tri V. Nguyen, John T. Yi, and David W. Pratt. "On the energy landscapes of 3-indoleacetic acid and 3-indolepropionic acid. A study of side chain flexibilities in their S0 and S1 electronic states." *Phys. Chem. Chem. Phys.*, 2006 **9**, 1049.
- 16. Jason W. Ribblett, Wayne E. Sinclair, David R. Borst, **John T. Yi**, and David W. Pratt. "High resolution electronic spectra of anisole and anisole-water in the gas phase. Hydrogen bond switching in the S₁ state." *J. Phys. Chem. A*, 2006 **110**, 1478.

- 17. John T. Yi, Jason W. Ribblett, and David W. Pratt. "Rotationally resolved electronic spectra of 1,2–Dimethoxybenzene and the 1,2–Dimethoxybenzene-water Complex." *J. Phys*. *Chem. A*, 2005 109, 9456.
- 18. John T. Yi, and David W. Pratt. "Rotationally resolved electronic spectroscopy of tryptophol in the gas phase." *Phys. Chem. Chem. Phys.*, 2005 7, 3680.
- 19. Cheolwha Kang, John T. Yi, and David W. Pratt. "High resolution electronic spectra of 7azaindole and its Ar atom van der Waals complex." J. Chem. Phys., 2005 123, 094306.
- 20. John T. Yi, Evan G. Robertson, and David W. Pratt. "Conformational analysis by laser spectroscopy in the gas phase: *p*-methoxyphenethylamine (a Neurotransmitter)." *Phys. Chem. Chem. Phys.*, 2002 **4**, 5244.

Oral Presentations: († Undergraduate Student and ‡ <u>Noble Prize Recipient</u>)

1. **John T. Yi**, Christian Brand, Miriam Wollenhaupt, David W. Pratt, W. Leo Meerts, and Michael Schmitt, "Rotationally resolved electronic spectroscopy of biomolecules in the gas phase. Melatonin"

66nd International Symposium on Molecular Spectroscopy, Columbus, Ohio, June 20-24, 2011.

 Jeremy Brooks[†], Patrick Lawson[†] and John T. Yi, "Rotational Analysis and Molecular Structure of 1,3-Dimethoxybenzene"
 Summer Undergraduate Research Experience (SURE) program Winston-Salem State University

Summer Undergraduate Research Experience (SURE) program, Winston-Salem State University, 2009.

3. Isaias Tasfaslassie[†] and **John T. Yi**, "Biomolecules in the Gas Phase. The Electronic Spectrum of 5-methoxyindole",

Summer Undergraduate Research Experience (SURE) program, Winston-Salem State University, 2007.

 Jinjun Liu, Ming-Wei Chen, John T. Yi and Terry A. Miller, "Stimulated Emission Pumping (SEP) Specroscopy Applied to the Methoxy Radical."
 (2nd International Superscript on Malaxies Superscript Calamata and Cala

62nd International Symposium on Molecular Spectroscopy, Columbus, Ohio, June 18-22, 2007.

- Leonardo Alvarez, John T. Yi and David W. Pratt, "Lifetime Broadening in the Rotationally Resolved Electronic Spectra of Some Furan Derivatives and Analogs in the Gas Phase." 62nd International Symposium on Molecular Spectroscopy, Columbus, Ohio, June 18-22, 2007.
- Jinjun Liu, John T. Yi and Terry A. Miller, "High-Resolution Laser Induced Fluorescence (LIF) Spectroscopy of Deuterated Isotopomers of the Methoxy Radical." 61th International Symposium on Molecular Spectroscopy, Columbus, Ohio, June 19-23, 2006.
- Jinjun Liu, John T. Yi, Vadim Stakhursky, Terry A. Miller, Dmitry Melnik, and <u>Robert F. Curl[‡]</u>, "High-Resolution Laser Induced Fluorescence (LIF) Spectroscopy of Deuterated Isotopomers of the Methoxy Radical."

61th International Symposium on Molecular Spectroscopy, Columbus, Ohio, June 19-23, 2006.

8. Dmitry Melnik, Robert F. Curl[‡], Jinjun Liu, **John T. Yi** and Terry A. Miller, "High-Resolution Laser Induced Fluorescence (LIF) Spectroscopy of Deuterated Isotopomers of the Methoxy Radical."

61th International Symposium on Molecular Spectroscopy, Columbus, Ohio, June 19-23, 2006.

9. Leonardo Alvarez, **John T. Yi**, and David W. Pratt, "High resolution electronic spectroscopy of methyl anisoles in the gas phase. Barrier height determinations for the methyl group torsional motions."

230th ACS National Meeting, Washington, DC, United States, Aug. 28-Sept. 1, 2005.

10. Leonardo Alvarez, **John T. Yi**, and David W. Pratt, "High resolution electronic spectroscopy of methyl anisoles in the gas phase. Barrier height determinations for the methyl group torsional motions."

60th International Symposium on Molecular Spectroscopy, Columbus, Ohio, June 20-24, 2005.

- 11. Leonardo Alvarez, **John T. Yi**, and David W. Pratt, "High resolution electronic spectroscopy of methyl anisoles."
 - 59th International Symposium on Molecular Spectroscopy, Columbus, Ohio, June 21-25, 2004.
- 12. Cheolhwa Kang, **John T. Yi**, and David W. Pratt, "Measurement of excited state dipole moments of 7-azaindole in the gas phase."

59th International Symposium on Molecular Spectroscopy, Columbus, Ohio, June 21-25, 2004.

- Cheolhwa Kang, John T. Yi, and David W. Pratt, "Rotationally resolved electronic spectra of 7azaindole and its argon complex: geometry and transition moment orientation." 59th International Symposium on Molecular Spectroscopy, Columbus, Ohio, June 21-25, 2004.
- 14. Tri V. Nguyen, **John T. Yi**, and David W. Pratt. "Probing the conformational landscape of 3indole acidic acid: Flexibility of the side chain." 59th International Symposium on Molecular Spectroscopy, Columbus, Ohio, June 21-25, 2004.
- 15. John T. Yi, Kenyon Applebee, Tri Nguyen, Joseph Roscioli, and David W. Pratt. "Biomolecules in the gas phase. The electronic spectrum of melatonin."
 58th International Symposium on Molecular spectroscopy, Columbus, Ohio, June 16-20, 2003.
- 16. John T. Yi, Evan G. Robertson, and David W. Pratt. "Conformational analysis by laser spectroscopy in the gas phase: *p*-methoxyphenethylamine (a Neurotransmitter)."
 57th International Symposium on Molecular spectroscopy, Columbus, Ohio, June 17-21, 2002.
- 17. John T. Yi, and David W. Pratt. "High resolution spectroscopy of the 1,2-dimethoxybenzene/D₂O complex."

55th International Symposium on Molecular Spectroscopy, Columbus, Ohio, June 12-16, 2000.

18. John T. Yi, Jason W. Ribblett, and David W. Pratt. "High resolution electronic spectra of 1,2dimethoxybenzene and 1,2-dimethoxybenzene/water complex." 54th International Symposium on Molecular Spectroscopy, Columbus, Ohio, June 14-18, 1999.

Poster Presentation: († **Undergraduate Student**)

- 1. Dexter Perkins[†], Tibran Pickens Flynn[†], Dustin Sellers[†], and **John T. Yi** "Molecular structures and properties of Lorcaserin" ACS Poster Vendor Night 2019, Greensboro, NC, April 16, 2019
- 2. Tibran Pickens Flynn[†] and **John T. Yi** "Achiral Structure of Phenytoin with Exposure to Light" Winston-Salem State University Scholarship Day, April 11, 2019.
- 3. Kamiya Bridges[†], Kimberly Briggman, David F. Plusquellic and **John T. Yi** "Segmented Chirped Pulse Terahertz (CP-THz) Spectroscopy of Nicotinic Acid", Annual Biomedical Research Conference for Minority Students (ABRCMS), Indianapolis, IN, Nov. 14-17, 2018.
- Dynasty M. Parker[†], David F. Plusquellic, and John T. Yi "Conformational Landscape of Biomolecules in Biotin", Annual Biomedical Research Conference for Minority Students (ABRCMS), Phoenix, AZ, Nov. 1-4, 2017.
- 5. Jazmyn Edwards[†], David F. Plusquellic, and **John T. Yi** "Exploring Molecular Structures!", Annual Biomedical Research Conference for Minority Students (ABRCMS), Phoenix, AZ, Nov. 1-4, 2017.
- Jazmyn Edwards[†], David F. Plusquellic, and John T. Yi "Chirped pulse THz spectroscopy of a biologically relevant molecule: N-Acetyl-Proline", The Southeastern Regional Meeting of the American Chemical Society (SERMACS), Charlotte, NC, Nov. 7-11, 2017.

- 7. Jazmyn Edwards[†] and **John T. Yi**, "Molecular Structure and Dynamics of Zoloft" Winston-Salem State University Scholarship Day, April 6, 2017.
- Dynasty M. Parker[†], Destini L. Black[†], Abbas E. Mohamed[†] and John T. Yi, "Conformational Landscape of Biomolecules in Biotin" Winston-Salem State University Scholarship Day, April 6, 2017.
- 9. Angelica Dibble[†] and **John T. Yi,** "Structural investigation of Methylparaben" Winston-Salem State University Scholarship Day, April 9, 2016.
- 10. Phierica Gardin[†] and **John T. Yi**, "Molecular Properties of Chiral BINOL" SURE, Winston-Salem State University, 2014.
- 11. Teasia Codio[†] and **John T. Yi** "Molecular Structure and Dynamics of 3-deoxymorphine (3-DOM) Analogous to "heroin", Winston-Salem State University Scholarship Day, April 9, 2013.
- 12. Taylor Harris[†] and **John T. Yi** "Molecular Dynamics of Methylenedioxyamphetamine (MDA) Analogous to "Ecstasy", Winston-Salem State University Scholarship Day, April 10, 2012.
- 13. Brittany Batts[†] and **John T. Yi**, "Theoretical Calculations of Energy and Stability Based on Tryptophan Geometries" 125th Sigma Xi Conference, Raleigh, NC, November 10-13th 2011.
- 14. **John T. Yi**, Christian Brand, Miriam Wollenhaupt, David W. Pratt, W. Leo Meerts, and Michael Schmitt, "Rotationally resolved electronic spectroscopy of biomolecules in the gas phase. Melatonin", 4th Biannual Chemical Sciences Symposium, NC A&T, October 21, 2011.
- 15. Brittany Batts[†] and **John T. Yi**, "Theoretical Calculations of Energy and Stability Based on Tryptophan Geometries" SURE, Winston-Salem State University, 2011.
- 16. Georges I. Guillaume[†] and **John T. Yi**, "Theoretical calculations on the Morphine structure" SURE, Winston-Salem State University, 2011.
- 17. Marry Sapp[†], Leonardo Alvarez-Valtierra, and **John T. Yi**, "Molecular structures and methyl torsional motion of 2-acetoxybenzoic acid (ASPIRIN)"Annual Biomedical Research Conference for Minority Students, Charlotte, NC, November 10-13, 2010.
- 18. Marry Sapp[†], Leonardo Alvarez-Valtierra, and **John T. Yi**, "Molecular structures and methyl torsional motion of 2-acetoxybenzoic acid (ASPIRIN)" SURE, Winston-Salem State University, 2010.
- 19. J. G. Naeini, S. Rahhal, J. T. Yi, P. Lawson[†], A. Hilliard[†], A. Radwan[†], "FTIR Spectroscopy Investigation of Nigella-sativa." Faces of a Healthy Future: National Conference to End Health Disparities II, Center of Excellence for the Elimination of Health Disparities, Winston-Salem State University, November 3-6, 2009.
- 20. J. G. Naeini, S. Rahhal, **J. T. Yi**, P. Lawson[†], A. Hilliard[†], A. Radwan[†], "FTIR Spectroscopy Investigation of Nigella-sativa" HBCU-UP National Research Conference, Washington, D.C., October 29-November 1, 2009.
- 21. Leonardo Alvarez, David W. Pratt and **John T. Yi**, "Lifetime broadening in the rotationally resolved electronic spectra of dibenzothiophene, 2,5-diphenylfuran and 2,5-diphenyl-1,3,4-oxadiazole in the gas phase. Intersystem crossing dynamics in the statistical limit."11th Life & Physical Sciences Research Symposium, NC A&T, Feb. 13, 2009.
- 22. Jafar. G. Naeini, Siham Rahhal, and **John T. Yi** "Raman and IR Spectra of the Bioactive Chemicals of Nigella-Sativa" Second Annual Symposium in physical and biological sciences, North Carolina A&T State University, North Carolina, February 28, 2008.
- 23. Leonardo Alvarez-Valtierra, David F. Plusquellic, John T. Yi, and David W. Pratt. "High resolution electronic spectra of acenaphthene and its argon Van der Waals complex in the gas phase."

Fitzpatrick Institute of photonics, Duke University, North Carolina, September 28-29, 2006.

- 24. Leonardo Alvarez, **John T. Yi**, and David W. Pratt, "High resolution electronic spectroscopy of methyl anisoles in the gas phase: Barrier height determinations for the methyl group torsional motions." 230th ACS National Meeting, Washington, DC, August. 28-September 1, 2005.
- John T. Yi, Tri V. Nguyen, and David W. Pratt. "Tryptophol and Tryptamine. Similar molecules with different personalities." Biological Molecules in the Gas-Phase, the Gordon Conference, Bates College, Maine, July 24-29, 2005.
- 26. John T. Yi, Tri V. Nguyen, and David W. Pratt. "Tryptophol and Tryptamine. Similar molecules with different personalities." 2005 Dynamics of Molecular Collisions Conference, Monterey CA, July 10-15, 2005.
- 27. Michael Barrett, Leonardo Alvarez, Cheolhwa Kang, Seung-hoon Hong, Diane Mitchell, Tri Nguyen, Alexei Nikolaev, Joseph Roscioli, **John T. Yi**, and David Pratt. "Rotationally resolved electronic spectroscopy of biological molecules in the gas phase." 35th Central Regional Meeting of the American Chemical Society, Pittsburgh Pennsylvania, October 19-22, 2003.
- 28. John T. Yi, Kenyon Applebee, Tri Nguyen, Joseph Roscioli, and David W. Pratt. "Biomolecules in the gas phase. The electronic spectrum of melatonin." Biochemistry Session, Science 2002, Pittsburgh Pennsylvania, September 18-20, 2002.
- 29. John T. Yi, David Borst, Bethany Engel, Cheolhwa Kang, Timothy Korter, Tri Nguyen, Alexei Nikolaev, Jennifer Reese, Joseph Roscioli, and David Pratt. "Exploring Molecular Structures!" Nanoscience Session, Science 2001, Pittsburgh, Pennsylvania, September 12-14, 2001.

Session Officer:

Science Competitions: Moderator Center for Mathematics, Science, and Technology Education, Winston Salem, April 25, 2015.

Electronics: Session Chair

60th International Symposium on Molecular Spectroscopy, Columbus, Ohio, June 21, 2005.

Author of Grant Proposal:

- 1. "What, 2D Chromium Triiodide (CrI¬3) may be magnetic, depending on its thickness?" Submitted to OSI Research Grant- WSSU (co-PI, Submission date Sept. 2017, Amount, \$10,000, **Funded**)
- 2. "Utilization of a novel Terahertz (THz) spectrometer on Biologically Relevant Molecules" NSF(HBCU) Supplemental Grant (PI, Submission Date: Jun. 2016, Amount: \$37,646, Funded)
- "High-Resolution Electronic Spectroscopy of Inter/Intra-Molecular Interactions on Biologically Relevant Molecules" NSF(HBCU) - Research Initiation Award Grant (PI, Submission Date: Oct. 2014, Amount: \$199,879 Funded)
- 4. "Acquisition of a Micro-Raman System for Multidisciplinary Research & Education" Department of Defense (DOD), Research and Education Program for Historically Black Colleges and Universities and Minority-Serving Institutions (HBCU/MI) (co-Investigator, Submission Date: Jun. 2014, Amount: \$348,919.00, Funded)
- "Development and Enhancement of the Physics Laboratories at Winston-Salem State University", Submitted to NSF(HBCU) -Targeted Infusion Project Grant (Senior Personnel, Submission Date: Mar. 2012, Amount: \$299,875, Funded)

- 6. "Instrumentation to Enhance Education and Research at Winston-Salem State University," Submitted to Department of Defense Infrastructure Support Program for Historically Black Colleges and Universities/Minority Institutions, (co-PI, Submission Date: 2007, Amount: \$180,335, Funded).
- "Orientation and conformational studies of chiral biomolecules: N-acetyl-tryptophan amide and N-acetyl-tryptophan methyl amide in the collision free environment," Research Initiation Program (RIP) at Winston Salem State University; 2007, (PI, Funded with \$10,000).

LASER EXPERIENCES:

Ar ion laser (171 Spectra Physics, and Innova 200 and Sabre Coherent), CW ring dye laser (380A Spectra Physics, and 899 and 699 Coherent), Nd:YAG (DCR-1A Quanta Ray), pulsed dye laser (PDL-1 Quanta Ray), XeCl excimer (EMG 103 and 101 Lambda Physik) XeF excimer (COMPex 100 Lambda Physik), and pulsed dye amplifier (FL2003 Lambda Physik).

PROFESSIONAL CONFERENCES

- Mathematical Results in Quantum Physics (Qmath)- Georgia Tech. University, Atlanta GA. Sept 7-11,2016
- Quality Education for Minorities (QEM) Network –Chemistry Information and Proposal Development Workshop, New Orleans, LA, Jan. 13-14, 2012.
- 2011 Southeastern Regional Meeting of the ACS (SERMACS), Richmond, VA Oct. 26-29, 2011
- National Conference to End Health Disparities II, Center of Excellence for the Elimination of Health Disparities, Winston-Salem State University, November 3-6, 2009.
- Nano Conference, Wake Forest University, North Carolina, October 19, 2009.
- 11th Life & Physical Sciences Research Symposium, NC A&T, North Carolina, Feb. 13, 2009.
- Second Annual Symposium in physical and biological sciences, North Carolina A&T State University, North Carolina, February 28, 2008.
- 62nd International Symposium on Molecular Spectroscopy, Columbus, Ohio, June 18-22, 2007.
- Fitzpatrick Institute of photonics, Duke University, North Carolina, September 28-29, 2006.