

**Liliya A. Yatsunyk**  
Professor and Chair  
Department of Chemistry and Biochemistry  
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### **Education**

- 1999-2003** Ph.D., Chemistry, University of Arizona, Tucson  
**1992-1997** Honors Diploma, Chemistry, Chernivtsi State University, Ukraine  
**1992-1998** Specialist degree, Ecology and Protection of Environment, Chernivtsi State University, Ukraine

### **Professional Experience**

- 2020-present** Professor, Department of Chemistry and Biochemistry, Swarthmore College, Swarthmore, PA
- 2019-2021** Chair, Department of Chemistry and Biochemistry
- 2018-2019** Visiting scientist at the Slovenian NMR Center in the research group of Prof. Janez Pavec and at the the European Institute of Chemistry and Biology, research group of Prof. Valerie Gabelica, Bordeaux, France. Supported by NIH grant.
- 2013-present** Associate Professor, Department of Chemistry and Biochemistry, Swarthmore College, Swarthmore, PA
- 2014-2015** Visiting scientist at the European Institute of Chemistry and Biology, research group of Jean-Louis Mergny, Bordeaux, France. Supported by *Initiative d'Excellence de l'université de Bordeaux* (IdEx Bordeaux) and *Professeur Invité*.
- 2010-2011** Visiting scientist at the European Institute of Chemistry and Biology, research group of Jean-Louis Mergny, Bordeaux, France
- 2007-2013** Assistant Professor, Department of Chemistry and Biochemistry, Swarthmore College, Swarthmore, PA
- 2003-2007** Postdoctoral Fellow, Departments of Biochemistry, Molecular Biology, and Cell Biology and of Chemistry, Northwestern University, Evanston, IL  
Research Director: Prof. Amy C. Rosenzweig

Research topics: Biochemical and biophysical studies of N-terminus of the Wilson Disease protein and its chaperone; Crystallographic and biochemical studies of periplasmic zinc binding protein, ZnuA; Crystallographic studies of ZnD-dme substituted myoglobin

- 1999-2003** Graduate Research Assistant, Chemistry Department, University of Arizona, Tucson, AZ  
Research Director: Prof. F. Ann Walker  
Dissertation Title: Synthesis, Structure, and Magnetic Spectroscopies (NMR, EPR and Mössbauer) of Non-Planar Hemes as Models of the Cytochrome *b* Heme Centers
- 2000-2002** Research Assistant, NMR Facility, Chemistry Department, University of Arizona  
Maintenance of five Bruker and Varian NMR spectrometers (200-600 MHz); UNIX administration; user training and support
- 1996-1999** Undergraduate Research Assistant, Chemistry Department, Chernivtsi State University, Ukraine.  
Research Director: Prof. Oleg E. Panchuk  
Thesis Title: Group IV dopant effect in CdTe semiconductors

### **Professional Affiliations and Activities**

- Member of American Chemical Society, Sigma Xi, Society of Porphyrins and Phthalocyanines (spp02175), and Society of Biological Inorganic Chemistry
- Frequent reviewer for more than 25 scientific journals, e.g. Nucleic Acids Research, Biochimie, Biochemistry, Chemical Communications, Journal of the American Chemical Society, Journal of Physical Chemistry, Inorganic Chemistry, PlosOne, Scientific Reports.
- Reviewer of grant proposals for the following programs:
  - ad hoc reviewer for NIH Biological Chemistry and Macromolecular Biophysics Integrated Review Group Macromolecular Structure and Function B Study Section (MSFB: October 2020; October 2021);
  - NSF Virtual Nucleic Acids Panel (Spring 2021);
  - NSF-CLP (March 2018)
  - NSF MRI panel (2011, 2016, and 2018);
  - ACS Petroleum Research Fund;
  - Research Corporation;
  - internal reviews for NIST
- Presented workshop for “Expanding your Horizons” and “Catalyst” programs at Swarthmore College designed to encourage middle school girls to consider careers in the sciences. (March 2010, March 2012)

### **Swarthmore College Service**

- Department head (2019-current)
- Member, Middle States Working Group: Support of the Student Experiences, Swarthmore College, 2017-2018
- Sigma Xi president 2017-2018
- Faculty Athletic Representative (FAR) 2015-2017
- Athletic Advisor to the Volleyball team 2008-present
- Research Ethics/IRB Committee 2011-2014
- Ad Hoc Committee on Foreign Language Acquisition 2012-2014
- Committee on Fellowships and Prizes 2008-2010

### **Teaching Experience prior to Swarthmore**

- 2006, 2005** Lecturer, Biological Science 110-2, Summer School, Northwestern University
- 2005 Spring** Lab lecturer and coordinator, General Chemistry Laboratory course, School of Continuing Studies, Northwestern University
- 2003 Spring** Teaching Assistant, Structural Chemistry (single crystal and powder X-ray diffraction), Chemistry Department, University of Arizona
- 2000-2002** Teaching Assistant, Practical NMR spectroscopy Lecture/Lab, Chemistry Department, University of Arizona; Led workshops in NMR spectroscopy for the NMR Facility, University of Arizona
- 1999-2000** Teaching Assistant, Organic Chemistry I and II, Chemistry Department, University of Arizona
- 1998-1999** Teaching Assistant, Inorganic Chemistry, Chemistry Department, Chernivtsi State University
- 1996-1999** Chemistry High school teacher, Korovia High School, Korovia, Chernivtsi region, Ukraine

**Research Students Supervised at Swarthmore** (\*students who started working in the lab during or right after their freshman year; **bolded** – students who completed theses)

<b>Student name</b>	<b>Career Path</b>
1. Eric Xing `26*	Current Swarthmore undergraduate
2. Abdullah Ali `25	Current Swarthmore undergraduate
3. Gwendolyn Lam `24	Current Swarthmore undergraduate
4. Erin Chen `23*	Current Swarthmore undergraduate
5. Harrison Kim `24	Current Swarthmore undergraduate
<b>6. Paul Seth `23</b>	Current Swarthmore undergraduate
7. Tamanaa Atrafi `23	Current Swarthmore undergraduate

<b>8. David (Ming) Ye `23</b>	Current Swarthmore undergraduate
9. Zahara Martinez `23	Current Swarthmore undergraduate
10. Sara Yun `23	Current Swarthmore undergraduate
11. Kevin Li `22	PhD program, MIT, (2021-current)
12. Charlotte Pohl `22	Research Assistant at the Memorial Sloan Kettering Cancer Center
13. Elizabeth Gallagher `23	Current Swarthmore undergraduate
14. Joanne Miao `22*	Graduated from Swarthmore
<b>15. Dana Beseiso `21</b>	PhD program, University of Michigan (2021-current)
16. Hyun Kyung Lee `21*	Postbac at NIH, Frederic (2021-current)
17. Ariana Yett `21*	Food and Beverage Analyst at Chipotle (2021-current)
<b>18. Jack Rubien `20</b>	PhD program, MIT, (2021-current). Research assistant, Jim Shorter's lab, University of Pennsylvania (2020-22)
19. Yanti Manurung `20	Graduate School, Northwestern. Research assistant, Awatramani's lab at Northwestern University
<b>20. Linda (Yingqi) Lin `20*</b>	Research assistant, Daniel Bauer's lab at Boston Children's Hospital
21. Allan Gao `19	MD program, University of Minnesota (2021-2025) Research assistant, Jim Shorter's lab, University of Pennsylvania
22. Letitia (Ying) Ho `19	Research Assistant, Daniel Bauer, Boston Children's Hospital.
<b>23. Deondre Jordan `19*</b>	Middle school science teacher 21/22 academic year Research Assistant, Jay Schneekloth lab, NIH 2019-21
24. Sayed Malawi `18	Data Scientist at Consumer Edge Insight
25. Amber Sheth `18	MD program, University of Wisconsin-Madison School of Medicine and Public Health
<b>26. Barrett Powel `18</b>	PhD program, MIT (2018-current)
27. Alice Liu `18	MD program, University of Michigan (2020-present) Public health research at Johns Hopkins Wilmer Eye Institute in the lab of Dr. Megan Collins
28. Irene Xiang `18	Investment Banking Analyst at Keefe, Bruyette & Woods bank
29. Delfin G. Buyco `17	PhD program, Northwestern (Interdisciplinary Biological Sciences program 2021-current) Research Assistant, University of Pennsylvania
30. Joo Hyun Lee `17	Dentistry program, NYU (2018-current); (Past) Research Assistant at UCSF School of Dentistry
31. Jessica Chen `17*	Dentistry program at Pennsylvania Dental Medicine (2018-current); (Past) Research Specialist in Prof. Maday lab in Perelman school of medicine, University of Pennsylvania
32. Kara Bledsoe `16	Masters in Library and Information Science with a special certificate in digital archives at the Pratt Institute, New York
33. Mary Kuchenbrod `16	Consultant at Arcadia Healthcare Solutions with plans to pursue MBA
34. Thomas L. Ruan `16	PhD program Physiology, Biophysics and Systems Biology

	(PBSB) program at Weill Cornell (start Fall 2019). (past): Technician in the laboratory of R. Sampogna at Columbia University Department of Medicine, Nephrology
35. Joshua Turek-Herman `16*	PhD program, Princeton University; (past) Postbac Cancer Research Training Award at the NCI-Frederick in Dr. Mikhail Kashlev's lab
36. Katherine Bredder `15	At Morningstar – an index fund ratings company in Chicago; tech development program
37. Cole Harbeck `15*	Works for software company, Metarhythm
38. Supriya Davis `15	MD program, Duke University; Fulbright scholarship 2015-16, New Delhi, India
39. Navin C. Sabharwal `14	MD program, Cleveland Clinic Lerner College of Medicine
<b>40. Michelle N. Ferreira `14</b>	MD program, Yale School of Medicine (ASC-SURF)
<b>41. Steven Barrett `13*</b>	PhD program, Stanford University, Biochemistry (NSF Graduate Fellowship)
<b>42. Vienna Tran `13</b>	MD program, University of Rochester
43. Karan Ahluwalia `13	MD program, UNC Chapel Hill
44. Rowen Jin `12	MD program, UCSF
<b>45. Jack Nicoludis `12*</b>	PhD program, Harvard University, Chemistry and Chemical Biology (Goldwater scholarship, NSF and NDSE Graduate Fellowships); completed
46. Erica Evans `11	Science of Nursing program, Salisbury University
47. Amlan Bhattacharjee `11*	MD program, SUNY Downstate Medical Center
<b>48. David Kornfilt `09</b>	PhD program, Chemistry, University of Illinois (ASC-SURF); currently, post doctoral fellow at Princeton in Prof. McMillin lab
49. Scott Taylor `09	Analyst at Amazon Fulfilment
50. David Marquardt `08	Analytical Developer at Biogen Idec

**Swarthmore Courses Taught** (in parenthesis – number of students in the course)

Semester	Assignment #1	Assignment #2	Assignment #3	Research students advised
Fall 2007	Chem 10H (20)			
Spring 2008	Chem 46 (7)	Chem 46L (8)		Chem 094 (2)
Fall 2008	Chem 10H (25)	Chem 10L (23)	Chem 10L (21)	Chem 180 (1) Chem 094 (1)
Spring 2009	Chem 46 (11)	Chem 46L (11)	Chem 38L (12)	Chem 180 (1)
Fall 2009	Chem 10H (34)	Chem 32L (9)	Chem 32L (10)	Chem 094(1)
Spring 2010	Chem 46 (10)	Chem 46L (10)		Chem 094 (2)
Fall 2010 Spring 2011	On sabbatical			Chem 094 (1)
Fall 2011	Chem 10H (17)	Chem 10H FYS	Chem 10L (14)	Chem 180(1)

		(8)		
Spring 2012	Chem 46 (10)	Chem 106 (6)	Chem 46L (4)	Chem 094 (3) Chem 180(1) Volunteer (1)
Fall 2012	Chem 10H (31)	Chem 10L (22)		Chem 094 (2) Chem 180 (2) Volunteer (1)
Spring 2013	Chem 46 (18)	Chem 46L (10)	Chem 46L (8)	Chem 094 (3) Chem 180 (2) Volunteer (1)
Fall 2013	Chem 10H (36)	Chem 106 (5)	Chem 10L (22)	Chem 180 (1) Chem 096 (1) Chem 094(2) Volunteer (1)
Spring 2014	Chem 56 (15)	Chem 57 (4)	Chem 57 (4)	Chem 180 (1) Chem 096 (1) Chem 094 (2) Volunteer (2)
Fall 2014 Spring 2015	On sabbatical			
Fall 2015	Chem 56 (15)	Chem 10L (22)	Chem 10L (22)	Chem 094 (1) Volunteer (1)
Spring 2016	Chem 57 (10)	Chem 57 (10)		Chem 094 (5) Volunteer (1)
Fall 2016	Chem 56 (20)	Chem 10L (14)	Chem 10L (20)	Chem 094 (5)
Spring 2017	Chem 57 (16)	Chem 57 (16)		Chem 094 (5) Volunteer (1)
Fall 2017	Chem 10H (20)	Chem 112 (7)		Chem 094 (2) Chem 180 (1) Volunteer (2)
Spring 2018	Chem 38L (10)	Chem 22L (10)	Chem 22L (14) Chem 93 (3)	Chem 094 (3) Chem 180 (1)
Fall 2018	On sabbatical			Chem 096 (1) Chem 094 (1) Volunteer (1)
Spring 2019	On sabbatical			Chem 096 (1) Chem 094 (1)
Fall 2019	Chem 56 (10)			Chem 180 (1) Volunteer (1)
Spring 2020	Chem 38L (12)	Chem 66 (10)	Chem 93 (1)	Chem 094 (3) Chem 180 (1)
Fall 2020	Chem 56 (9)	Chem 10 (18)		Chem 096 (1) Volunteer (3)
Spring 2021	Chem 66(5)	Chem 38L (11)		Chem 094 (3)

				Chem 180 (1)
Fall 2021	Chem56 (7)			Chem 094 (4) Volunteer (2)
Spring 2022	Maternity leave			Chem 094 (4) Volunteer (1)
Fall 2022	Sabbatical leave			Chem 094 (2) Chem 096 (1) Chem 180 (1) Volunteer (1)
Spring 2022	Sabbatical leave			Chem 094 (5) Chem 096(1) Chem 180(1) Volunteer (1)

Course Titles:

Chemistry 10H:	Honors General Chemistry
Chemistry 10H FYS:	Honors General Chemistry First year seminar
Chemistry 10L:	General Chemistry, laboratory
Chemistry 22L:	Organic Chemistry I, laboratory
Chemistry 32L:	Organic Chemistry II, laboratory
Chemistry 38L:	Biochemistry, laboratory
Chemistry 046:	Inorganic Chemistry
Chemistry 46L:	Inorganic Chemistry, laboratory
Chemistry 056:	Inorganic Chemistry, same as Chemistry 046
Chemistry 057:	Advanced Integrated Experimental Chemistry (writing course)
Chemistry 066:	Advanced Experimental Chemistry: Inorganic
Chemistry 093:	Directed Reading
Chemistry 094:	Research project, typically 0.5 credit
Chemistry 096:	Research thesis, 1 credit
Chemistry 106:	Topics in Inorganic Chemistry: Bioinorganic chemistry
Chemistry 112:	Topics in Inorganic Chemistry: Supramolecular chemistry and DNA nanotechnology
Chemistry 180:	Honors research thesis, 1 credit

**External Grant Proposals and Awards**

**National Institute of Health (1R15CA253134)**

Investigator: Liliya A. Yatsunyk

Period: 09/01/2020 – 09/01/2023 (\$431,986)

*Deciphering the structure and dynamics of non-canonical DNA implicated in cancer*

- The major goals of this proposal is to 1) To obtain X-ray structures of GQs and of GQ-ligand complexes; 2) To obtain X-ray structures of i-motif and i-motif-ligand complexes; 3) To elucidate the mechanisms of ligand-induced conformational changes in G-rich DNA

**National Institute of Health (R01GM135443)**

Investigator: Brett Kaufman; co-investigator Liliya A. Yatsunyk

Period: 9/01/2019– 8/31/2024 (\$100,000)

*Mitochondrial G-quadruplex structures in health and disease*

- The major goal of Dr. Yatsunyk's proposed research is to determine the G-quadruplex forming potential of mitochondria-derived DNA sequences (mtDNA). Another important goal is to characterize ligand binding properties (e.g. binding constants as well as ligand-induced stability) of the DNA sequences with the highest GQ-forming potential and selected small molecule ligands.

**National Institute of Health (1R15CA208676-01A1)**

Investigator: Liliya A. Yatsunyk

Period: 06/01/2017 – 06/01/2020 (\$410,501)

*Deciphering the structure and dynamics of quadruplex DNA and DNA-ligand complexes*

- Our major goals are: 1) To obtain X-ray structures of G-quadruplexes (GQs) and of GQ-ligand complexes; 2) To elucidate the mechanisms of ligand-induced conformational changes in G-rich DNA; 3) To synthesize novel GQ ligands with improved binding affinity and selectivity and determine their in vivo effects.

**Camille and Henry Dreyfus Teacher-Scholar Award**

Investigator: Liliya A. Yatsunyk

Period: 09/01/2016- 08/31/2021 (\$60,000)

*Deciphering the structure and dynamics of quadruplex DNA and DNA-ligand complexes*

- This proposal aims to develop new highly selective anti-cancer therapies. The research explores unusual DNA structures called quadruplexes that are involved in a significant number of cancer-related biological processes. Our work will yield comprehensive structural and mechanistic characterization of quadruplexes and their complexes with ligands.

**Commonwealth of Pennsylvania, Department of Health CURE grant (S00000775\_PA)**

Investigator: Liliya A. Yatsunyk

Period: 01/01/2015-03/06/2017 (\$11,956)

*Understanding of interactions between porphyrin ligands and G-quadruplex DNA*

- The project will contribute to our fundamental understanding of porphyrin interactions with GQ DNA, shed light on the origin of ligand selectivity for a specific DNA target, and provide guidance in preparation of GQ ligands with desired medicinal properties

**Initiative d'Excellence de l'Université de Bordeaux (IdEx Bordeaux)**

Investigator: Liliya A. Yatsunyk and Jean-Louis Mergny

Period: 2014-2015 academic year

*Visiting professor Program*

- The funds will pay three months' salary (March-May) during sabbatical visit to IECB, Bordeaux, France for research in Jean-Louis Mergny group.



### **Université de Bordeaux Professeur invité**

Investigator: Liliya A. Yatsunyk and Jean-Louis Mergny

Period: summer/fall 2014

*Visiting professor Program*

- The funds will pay two months' salary (September/October) during sabbatical visit to IECB, Bordeaux, France for research in Jean-Louis Mergny group.

### **National Science Foundation MRI**

Investigators: Robert S. Paley, Stephen T. Miller, Kathleen P. Howard, and Liliya A. Yatsunyk

Period: August 15, 2013 to July 31, 2016 (\$269,990)

*MRI: Acquisition of 400-MHz NMR Spectrometer*

- The funds were be used for purchase of a new Avance III 400 MHz High Performance Digital NMR Spectrometer from Bruker Biospin Corporation to replace an aging and outdated 400 MHz spectrometer. The new instrument is housed in the Chemistry and Biochemistry Department at Swarthmore College.

### **Mellon Seed Grant**

Investigators: Sharon Burgmayer, Liliya A. Yatsunyk, Robert Scarrow

Period: 2017-2019 (\$6,000) and 2009-2012 (\$5,300)

*Support for T-BIC, a Scholarly Community of Tri-College Faculty and Students Investigating Bioinorganic Chemistry*

- The funds are used to facilitate joint group meetings (4 per year) and fund outside speaker (1 per year). This setting brings together students and faculty engaged in the research in inorganic field from Swarthmore, Haverford, Bryn Mawr, and Ursinus and allows for fruitful idea exchange and result dissemination.

### **Camille and Henry Dreyfus Foundation Faculty Start-up Award**

Investigator: Liliya A. Yatsunyk

Period: 2007- 2012 (\$30,000)

*Synthesis and Characterization of Novel Cationic Porphyrins: Applications to Cancer Treatment and Chirality Sensing.*

- The goal of this project is to study the G-quadruplex DNA stabilization by interesting porphyrin ligands; to investigate the effect of a central metal substitution on porphyrin-DNA binding interactions; and to modify existing cationic porphyrins via lanthanide addition to improve and extend their chirality sensing of various biological substrates.

### **Research Corporation Cottrell College Science Award**

Investigator: Liliya A. Yatsunyk

Period: 2009- 2010 (\$41,380)

*Synthesis and G-quadruplex DNA Binding of Novel  $\beta$ -substituted Cationic Porphyrins: Application to Cancer Treatment*

- The goal of this project was to prepare  $\beta$ -substituted porphyrins and study the effect of  $\beta$ -substituents on porphyrin—G-quadruplex DNA binding modes, affinities and selectivities. As part of this project we synthesized beta-octaethyl derivative of 5,10,15,20-tetra(N-methyl-4-pyridyl)-21H,23H-porphyrin) and began its characterization.

My responsibilities as PI included designing the project, training and overseeing undergraduate students.

### **Pfizer Summer Undergraduate Research Fellowship**

Investigator: Liliya A. Yatsunyk, David Kornfilt

Period: summer 2008 (\$5,000)

*Synthesis and Characterization of Novel Cationic Porphyrins: Application to Cancer Treatment and Chirality Sensing.*

- This is a summer stipend awarded to my research student, David Kornfilt, to conduct synthetic project directed at preparation and characterization of novel water soluble porphyrins with non-planar core.

Investigator: Liliya A. Yatsunyk, Michelle Ferriera

Period: summer 2013 (\$5,000)

*Synthesis of novel polyamide derivatives of protoporphyrin –IX and mesoporphyrin IX as potential G-quadruplex stabilizers.*

- This is a summer stipend awarded to my research student, Michelle Ferriera, to conduct synthetic project directed at modification of current promising G-quadruplex stabilizer porphyrin called NMM in order to improve its G-quadruplex binding affinity.

### **Swarthmore Grants**

#### **Michener Faculty Fellowship**

Period: Spring 2015

- This grant covered the second semester of salary from January 2015 till August 2015 while I am on sabbatical at the European Institute of Chemistry and Biology in France in the research group of Jean-Louis Mergny.

#### **Eugene Lang Faculty Fellowship**

Period: Spring 2011

- This grant covered the second semester of salary from January 2011 till August 2011 while I was on sabbatical at the European Institute of Chemistry and Biology in France in the research group of Jean-Louis Mergny. In addition, it covered \$1,500 for research related expenses for the project involving characterization of quadruplex binding properties of *N*-methylmesoporphyrin IX.

#### **Hungerford grant**

Period: 2010-2011 (\$3,000)

- Grant money was used to cover part of the cost associated with attending the *Third International Meeting on G-quadruplex and G-assembly* in Sorrento, Italy (June 28 - July 1 2011); a visit to Dr. B. Chaires lab at Brown Cancer Center, University of Louisville (January 2010); and publication cost in an open-access journal, *Nucleic Acids Research*

#### **Swarthmore College Research Grant**

Period: 2007-current (upward of \$1,000)

- This grant is used to cover supplies and reagents necessary to run the laboratory.

### **HHMI-supported Summer Research Fellowships**

Period: 2008-current (\$4,350 per student)

- This grant covered summer stipends for Scott Taylor (2008), Erica Evans (2009), Karan Ahluwalia (2010), Steven Barrett (2011), Vienna Tran (2012), Navin Sabharwal (2013), Katherine Bredder (off campus HHMI 2013).

### **Publications (Swarthmore undergraduate co-authors underlined)**

1. Li, K.; Jordan, D.; Lin, L.; McCarthy, S.; Schneekloth J. S.; **Yatsunyk, L. A.** Crystal structure of an oncogene I-motif from the HRAS promoter. *To be submitted to JACS*
2. Ye M.; Chen, E. C.; Pfeil, S. H.; Martin, K. N.; Atrafi, T.; Yun, S.; Martinez, Z.; **Yatsunyk, L. A.** Homopurine guanine-rich sequences in complex with N-methyl mesoporphyrin IX form parallel G-quadruplex dimers and display a unique symmetry tetrad *Bioorg. Med. Chem.* **2023**, 77 <https://doi.org/10.1016/j.bmc.2022.117112>
3. Li K.; **Yatsunyk L. A.**; Neidle S. Machine learning shows torsion angle preferences in left-handed and right-handed quadruplex DNAs *Biophysical J.*, **2022**, doi.org/10.1016/j.bpj.2022.08.021.
4. Beseiso, D.; Chen, E. V.; McCarthy, S. E.; Martin, K. N.; Gallagher, E. P.; Miao, J.; and **Yatsunyk, L. A.** The First Crystal Structures of Hybrid and Parallel Four-Tetrad Intramolecular G-Quadruplexes *Nucleic Acids Res.*, **2022**, 50, 2959–2972
5. Li, K.; **Yatsunyk, L. A.**; Neidle, S. Water spines and networks in G-quadruplex structures *Nucleic Acids Res.* **2021**, 49(11), 519-528 <https://doi.org/10.1093/nar/gkaa1177>
6. Lin, L. Y.; McCarthy, S.; Powell, B. M.; Manurung, Y.; Xiang I. M.; Dean, W. D.; Chaires, B.; **Yatsunyk, L. A.** Biophysical and X-ray structural studies of the (GGGTT)<sub>3</sub>GGG G-quadruplex in complex with N-methyl mesoporphyrin IX *PLOS ONE*, **2020**, 15(11): e0241513. <https://doi.org/10.1371/journal.pone.0241513>.
7. Johnson, F. B.; and **Yatsunyk, L. A.** G-quadruplexes in fibrotic scars may open new therapeutic avenues for wound healing *FEBS Let.*, **2019**, 594, 19-20.
8. Yett, A.; Lin L. Y.; Beseiso, D.; Miao, J., and **Yatsunyk, L. A.** N-methyl mesoporphyrin IX as a highly selective light-up probe for G-quadruplex DNA. *J. Porphyr. Phthalocya.* Contribution to Women in Porphyrin Sciences Special Issue (\* equal contributions of all authors), **2019**, 23, 1195-1215.
9. Falabella, X. M.; Kolesar, J. E.; Wallace, C.; de Jesus, D., Sun, L.; Taguchi, Y. V.; C. Wang, C.; Wang, T.; Xiang, I. M.; Alder, J. K.; Maheshan, R.; Horne, W.; Turek-Herman, J.; Pagano, P. J.; St. Croix, C. M.; Sondheimer, N; **Yatsunyk, L. A.**; Johnson F.B.; and

- Kaufman B. A. G-quadruplex dynamics contribute to regulation of mitochondrial gene expression *Sci Rep.*, **2019**, *9*, 5605-5621.
10. Naeem M. M.; Maheshan R.; Costford S. R.; Wahedi A.; Trajkovski M.; Plavec J.; **Yatsunyk L. A.**; Ciesielski G. L.; Kaufman B. A.; Sondheimer N. G-Quadruplex Mediated Reduction of a Pathogenic Mitochondrial Heteroplasmy. *Hum. Mol. Genet.* **2019**, *28*, 3163-3174.
  11. Sabharwal, N. C.; Chen, J.; Lee, J. H.; Gangemi, C. M. A., D'Urso, A.; and **Yatsunyk, L. A.** Interactions between spermine-derivatized tentacle porphyrins and the human telomeric DNA G-quadruplex *Int. J. Mol. Sci.* **2018**, *19*, 3686.
  12. Shastri, N.; Tsai, Y-Ch.; Hile, S.; Jordan, D.; Powell, B.; Chen, J.; Maloney, D.; Dose, M.; Lo, Y.; Anastassiadis, T.; Rivera, O.; Kim T.; Shah, S.; Borole, P.; Asija, K.; Wang, X.; Smith, K. D.; Finn, D.; Schug, J.; Casellas, R.; **Yatsunyk, L. A.**; Eckert, K. A.; and Brown, E. J. Genome-wide identification of structure-forming repeats as principal sites of fork collapse upon ATR inhibition *Mol. Cell* **2018**, *72*, 222-238.e21.
  13. Guédin, A.; Lin, Y.; Armane, S.; Mergny, J. -L.; Thore, S.; **Yatsunyk, L. A.** Crystal structure of G-rich sequence from the *Dictyostelium discoideum* genome: a four quartet G-quadruplex *Nucleic Acids Res.* **2018**, *46(10)*, 85297-5307 (*equal contributions of two first authors*)
  14. Kerkour A.; Marquevielle, J.; Ivashchenko, S.; **Yatsunyk, L. A.**, Mergny, J.-L.; Salgado, G. "High-resolution 3D NMR structure of the KRAS proto-oncogene promoter reveals key features of a G-quadruplex involved in transcriptional regulation" *J. Biol. Chem.* **2017**, *292(19)*, 8082-8091.
  15. Ruan, T.; Davis, S.; Powell, B.; Harbeck, C.; Habdas, J.; Habdas, P.; **Yatsunyk, L. A.** "Lowering the overall charge on TMPyP4 improves its selectivity for G-quadruplex DNA" *Biochimie* **2017**, *132*, 121-130.
  16. Boschi, E.; Davis, S.; Taylor, S.; Butterworth, A.; Chirayath, L. A.; Purohit, V.; Siegel, L. K.; Buenaventura, J.; Sheriff, A. H.; Jin, R.; Sheardy, R.; **Yatsunyk, L. A.**; and Azam, M. "Interaction of a cationic porphyrin and its metal derivatives with G-quadruplex DNA" *J. Phys. Chem. B* **2016**, *120 (50)*, 12807-12819 (*equal contribution of two last authors*).
  17. **Yatsunyk, L. A.**, Monchaud, D., and Sen, D. "Blending Quadruplexes and Bordeaux: a Grand Cru! The 5th International Meeting on Quadruplex Nucleic Acids, Bordeaux (France)" *Cell Chem. Bio.* **2016**, *23(3)*, 320-329.
  18. Sabharwal, N.C.; Mendoza, O.; Nicoludis, J. M.; Ruan, T.; Mergny, J. -L. **Yatsunyk, L. A.** "Investigation of the interactions between Pt(II) and Pd(II) derivatives of 5,10,15,20-tetrakis (*N*-methyl-4-pyridyl) porphyrin and G-Quadruplex DNA" *J Biol. Inorg. Chem.* **2016**, *21(2)*, 227-239.

19. Dong, D. W.; Filipe Pereira, F.; Barrett, S. P.; Kolesar, J. E.; Cao, K.; Damas J.; **Yatsunyk, L. A.**; Johnson F. B.; Kaufman, B. A. “Association of G-quadruplex forming sequences with human mtDNA deletion breakpoints” *BMC Genomics* **2014**, *15*, 677-691.
20. **Yatsunyk, L. A.**; Mendoza, O.; Mergny, J.-L. “Nano-oddities”: Unusual nucleic acid assemblies for DNA-based nanostructures and nanodevices” *Acc. Chem. Res.* **2014**, *47*, 1836-1844.
21. Sabharwal, N. C.; Savikhin, V.; Turek-Herman, J. R.; Nicoludis, J. M.; Szalai, V. A.; **Yatsunyk, L. A.** “N-methylmesoporphyrin IX fluorescence as a reporter of strand orientation in guanine quadruplexes” *FEBS J.* **2014**, *281*(7), 1726-1737.
22. Renaud de la Faverie, A.; Guédin, A.; Bedrat, A.; **Yatsunyk, L. A.**; Mergny, J.-L. “Thioflavin T as a fluorescence light-up probe for G4 formation” *Nucleic Acids Res.* **2014**, e65.
23. **Yatsunyk, L. A.**; Piétrement, O.; Albrecht, D.; Tran, P. L. T.; Renčiuk, D.; Sugiyama, H.; Arbona, J.-M.; Aimé, J.-P.; Mergny, J.-L. “Guided assembly of tetramolecular G-quadruplexes” *ACS Nano* **2013**, *7*, 5701-5710.
24. Nicoludis, J. M.; Miller, S.; Jeffrey, P.; Barrett, S. P.; Rablen, P. R.; Lawton, T.; **Yatsunyk, L. A.** “Optimized end-stacking provides specificity of N-methyl mesoporphyrin IX for human telomeric G-quadruplex DNA” *J. Am. Chem. Soc.* **2012**, *134* (50), 20446-20456.
25. **Yatsunyk, L. A.**; Bryan, T.; Johnson, F. B. “G-ruption: The third international meeting on G-quadruplex and G-assembly” *Biochimie* **2012**, *94*, 2475-2483.
26. Nicoludis, J. M.; Barrett, S. P.; Mergny, J.-L.; **Yatsunyk, L. A.** “Interaction of human telomeric DNA with N-methyl mesoporphyrin IX” *Nucleic Acids Res.* **2012**, *40*, 5432-5447.
27. Bhattacharjee, A. J.; Ahluwalia, K.; Taylor, S.; Jin, O.; Nicoludis, J. M., Buscaglia, R.; Chaires, J. B.; Kornfilt, D. J. P.; Marquardt, D. G. S., **Yatsunyk, L. A.** “Induction of G-quadruplex DNA structure by Zn(II) 5,10,15,20-tetrakis(N-methyl-4-pyridyl)porphyrin” *Biochimie* **2011**, *93*, 1297-1309.
28. Smith, J. S.; Chen, Q.; **Yatsunyk, L. A.**; Nicoludis, J. M.; Garcia, M. S.; Kranaster, R.; Balasubramanian, S.; Monchaud, D.; Teulade-Fichou, M.-P.; Abramowitz, L.; Schultz, D. C.; and Johnson, F. B. “Rudimentary G-quadruplex-based telomere capping in *Saccharomyces cerevisiae*” *Nat. Struct. Mol. Biol.* **2011**, *18*, 478–485.
29. Benítez, J. J.; Keller, A. M.; Huffman, D. L.; **Yatsunyk, L. A.**; Rosenzweig, A. C.; Chen P. “Relating dynamic protein interactions of metallochaperones with metal transfer at the single-molecule level” *Faraday Discuss.* **2011**, *148*, 71-82; discussion 97-108.
30. Mergny, J.L., **Yatsunyk, L.**, Guédin, A., Gros, J., Renaud de la Faverie, A., Smith, N., Renciuik, D., Tran, P.L.T., Bourdoncle, A. “DNA quadruplexes for bio- and nano-

- technologies” *Conference proceedings*, Chemistry of Nucleic Acid Components – Collection symposium series, **2011**, *12*, 218-221. 15th Symposium on Chemistry of Nucleic Acid Components, Jun 05-10, 2011 Cesky Krumlov, Czech Republic
31. Balasubramanian, R.; Smith, S. M.; Rawat S.; **Yatsunyk, L. A.**; Stemmler, T. L.; Rosenzweig, A. C. “Oxidation of methane by a biological dicopper center” *Nature* **2010**, *465*, 115-119.
  32. Banci, L.; Bertini, I.; Cantini, F.; Rosenzweig A. C.; **Yatsunyk, L. A.** “Solution structure and interaction with the copper(I) chaperone HAH1 of the third and fourth domain of human ATP7B” *Biochemistry* **2008**, *47*, 7423-7429.
  33. Benitez, J. J.; Keller, A. M.; Ochieng, P.; **Yatsunyk, L. A.**; Huffman, D. L.; Rosenzweig, A. C.; Chen, P. “Probing Transient Copper Chaperone-Wilson Disease Protein Interactions at the Single-Molecule Level with Nanovesicle Trapping” *J. Am. Chem. Soc. (Communication)* **2008**, *130*, 2446-2447.
  34. **Yatsunyk, L. A.**; Easton, J. A.; Kim, L. R.; Sugarbaker, S. A.; Bennett, B.; Breece, R. M.; Vorontsov, I. I.; Tierney, D. L.; Crowder, M. W.; Rosenzweig, A. C. “Structure and metal binding properties of ZnuA, a periplasmic zinc transporter from *Escherichia coli*” *J. Biol. Inorg. Chem.* **2008**, *13*, 271-288.
  35. **Yatsunyk, L. A.**; Rosenzweig, A. C. “Copper(I) Binding and Transfer by the N-terminus of the Wilson Disease Protein” *J. Biol. Chem.* **2007**, *282*, 8622-8631.
  36. Weeler, K.; Nocek, J. M.; Cull, D.; **Yatsunyk, L. A.**; Rosenzweig, A. C.; Hoffman, B. M. “Dynamic Docking of Cytochrome *b5* With Myoglobin and  $\beta$ -Hemoglobin: Heme-Neutralization ‘Squares’ and the Binding of Electron-Transfer-Reactive Configurations” *J. Am. Chem. Soc.* **2007**, *129*, 3906-3917.
  37. Teschner, T.; **Yatsunyk, L. A.**; Schünemann, V.; Hu, C.; Scheidt, W. R.; Walker, F. A.; Trautwein, A. X. “Low-Spin Ferriheme Models of the Cytochromes: Mössbauer Spectra of Six Crystalline Complexes Having Axial Ligand Plane Dihedral Angles Ranging from  $0^\circ$  to  $90^\circ$ ” *J. Am. Chem. Soc.* **2006**, *128*, 1379-1389.
  38. **Yatsunyk, L. A.**; Dawson, A.; Carducci, M. D.; Walker, F. A. “Models of the Cytochromes: Crystal Structures and EPR Spectral Characterization of Low-Spin Bis-Imidazole Complexes of (OETPP)Fe<sup>III</sup> Having Intermediate Ligand Plane Dihedral Angles” *Inorg. Chem.* **2006**, *45*, 5417-5428.
  39. **Yatsunyk, L. A.**; Walker, F. A. “Synthesis and characterization of the iron(III) complexes of tetra-( $\beta, \beta'$ -tetramethylene)tetraphenylporphyrin, (TC<sub>6</sub>TPP)FeCl and (TC<sub>6</sub>TPP)FeONO<sub>2</sub>” *J. Porph. Phthal.* **2005**, *9*, 214-228.
  40. **Yatsunyk, L. A.**; Ogura, H.; Walker, F. A. “Kinetics of Ring Inversion in Strongly Non-Planar Iron(III) Octaalkyltetraphenylporphyrinates” *Inorg. Chem.* **2005**, *44*, 2867-2881.

41. **Yatsunyk, L. A.**; Shokhirev, N, V.; Walker, F. A. “Magnetic Resonance Spectroscopic Investigations of the Electronic Ground and Excited States in Strongly Non-Planar Iron(III) Dodecasubstituted Porphyrins” *Inorg. Chem.* **2005**, *44*, 2848-2866.
42. Cai, S.; Belikova, E.; **Yatsunyk, L. A.**; Stolzenberg, A. M.; Walker, F. A. “Magnetic Resonance Investigations of Mono-Oxo-Octaethylchlorinatoiron(III) Chloride and Its Bis-Imidazole Complex” *Inorg. Chem.* **2005**, *44*, 1882-1889.
43. Teschner, T.; Trautwein, A. X.; Schünemann, V.; **Yatsunyk, L. A.**; Walker, F. A. “Low-Spin Ferriheme Models of the Cytochromes: Correlation of Molecular Structure with EPR and Mossbauer Spectral Parameters” *Hyperfine Interactions* **2004**, *156/157*, 285-291.
44. Abajian, C.; **Yatsunyk, L. A.**; Ramirez, B. E.; Rosenzweig, A. C. “Solution Structure and Binding of Copper(I) by Yeast Cox17” *J. Biol. Chem.* **2004**, *279*, 53584-53592.
45. Wernimont, A. K; **Yatsunyk, L. A.**; Rosenzweig, A. C. “Binding of copper(I) by the Wilson disease protein and its copper chaperone” *J. Biol. Chem.* **2004**, *279*, 12269-12276.
46. **Yatsunyk, L. A.**; Walker, F. A. “NMR and EPR Spectroscopic and Structural Studies of Low-Spin,  $(d_{xz}, d_{yz})^4(d_{xy})^1$  Ground State Fe(III) bis-(tert-Butylisocyanide) Complexes of Dodecasubstituted Porphyrins” *Inorg. Chem.* **2004**, *43*, 4341-4352.
47. **Yatsunyk, L. A.**; Walker, F. A. “Structural, NMR, and EPR Studies of  $S = 1/2$  and  $S = 3/2$  Fe(III) Bis(4-Cyanopyridine) Complexes of Dodecasubstituted Porphyrins” *Inorg. Chem.* **2004**, *43*, 757-777.
48. **Yatsunyk, L. A.**; Carducci, M. D.; Walker, F. A. “Low-Spin Ferriheme Models of the Cytochromes: Correlation of Molecular Structure with EPR Spectral Type” *J. Am. Chem. Soc.* **2003**, *125*, 15986-16005.
49. **Yatsunyk, L. A.**; Walker, F. A. “ $^{19}\text{F}$  Isotropic Shifts in Paramagnetic Iron(III) Octaethyltetraphenylporphyrinate and Tetraphenylporphyrinate Complexes of a Variety of Electronic Ground States: Implication for the Electron Configuration of Chloroiron Tri-(pentafluorophenyl)corrolate” *Inorg. Chim. Acta* **2002**, *337*, 266-274.
50. Ogura, H.; **Yatsunyk, L. A.**; Medforth, C. J.; Smith, K. M.; Barkigia, K. M.; Renner, M. W.; Melamed, D.; Walker, F. A. “Molecular Structures and Magnetic Resonance Spectroscopic Investigations of Highly Distorted Six-Coordinate Low-Spin Iron(III) Porphyrinate Complexes” *J. Am. Chem. Soc.* **2001**, *123*, 6564-6578.
51. Panchuk, O.; Savitsky, A.; Fochuk, P.; Nykonyk, Ye.; Parfenyuk, O.; Shcherbak, L.; Ilashcuk, M.; **Yatsunyk, L. A.**; Feychuk, P. “IV group dopant compensation effect in CdTe,” *J. Cryst. Growth* **1999**, *197*, 607-611.

52. Fochuk, P. M.; Panchuk, O. E.; Kochergan, V. I.; **Yatsunyk, L. A.** “High-temperature defects equilibria in Cu-doped CdTe” *Neorg. Mater.* **1996**, *32*, 1356-1358.

### **Invited Talks**

1. Non-canonical DNA structures and their interactions with small molecule ligands. April 14, **2022**, Temple University, PA
2. Biophysical and structural investigations of non-canonical DNA implicated in cancer and other diseases. *Slovenian-American Science Symposium*, Oct 30, **2021**, Washington DC, Slovenian Embassy
3. Structure and biophysical properties of non-canonical DNA alone and with ligands. Oct 1<sup>st</sup> **2021**, Haverford College, PA.
4. Non-canonical DNA structures and their interactions with small molecule ligands. August 14-21, **2021**, *International Union of Crystallography (IUCr-2021)*, hybrid conference, Prague, Czech Republic.
5. Porphyrins and G-quadruplex DNA – a long lasting union. June 28-July 3, **2021**, *International Conference on Porphyrins and Phthalocyanines*, ICPP-11, virtual meeting.
6. Structural studies of non-canonical DNA in complex with porphyrin ligands. February 10, **2020**, Department of Chemistry and Biochemistry, *University of the Sciences*, Philadelphia PA.
7. Structural studies of non-canonical DNA in complex with porphyrin ligands. November 9, **2019**, *Philadelphia Inorganic Colloquium*, St. Joseph University, Philadelphia PA.
8. Deviant DNA and the lessons we learn. October 2<sup>nd</sup>, **2019**, *Swarthmore College faculty lunch*, Swarthmore, PA
9. Biophysical and structural investigations into CAGAGG repeats associated with cancer September 11, **2019**, Department of Chemistry, *West Virginia University*, WA.
10. Structural and biophysical studies of GQ DNA in complex with porphyrin ligands, April 30, **2019**, Department of Chemistry, University of Strasbourg, France.
11. Structural and biophysical studies of non-canonical DNA implicated in replication stress, April 29, **2019**, Kaiserslautern University, Germany.
12. Structural and biophysical studies of non-canonical DNA implicated in replication stress, April 10, **2019**, Institute Curie, Orsay, France.
13. Structural and biophysical studies of GQ DNA in complex with porphyrin ligands, November 16, **2018**, *Univerza v Ljubljani Fakulteta za kemijo in kemijsko tehnologijo*, Ljubljana, Slovenia; December 4, **2018**, *University of Naples, Frederico II*, Italy.
14. Biophysical and structural investigations into CAGAGG repeats associated with cancer November 6, **2018**, *Institute of the Biophysics of the Czech Academy of Sciences*, Brno, and November 9, **2018**, *Institute of Organic Chemistry and Biochemistry*, Prague, Czech Republic; November 29, **2018**, *University of Catania*, Italy.



15. Biophysical and structural investigations into CAGAGG repeats associated with cancer October 25-27, **2018**, *Advances in Non-canonical Nucleic Acid*, Portoroz, Slovenia
16. Biophysical and structural investigations into CAGAGG repeats associated with cancer October 11, **2018**, *Slovenian NMR center*, Ljubljana, Slovenia
17. Biophysical and structural investigations of non-canonical DNA implicated in cancer August 30, **2018**, *The University of Alabama*, Tuscaloosa, AL
18. Structural studies of non-canonical DNA in complex with porphyrin ligands July 1-6, **2018**. *International Conference on Porphyrins and Phthalocyanines*, ICPP-10, Munchen, Germany
19. Structural studies of CAGAGG repeats from difficult-to-replicate regions of the mammalian genome. May 5, **2018**, *11<sup>th</sup> Frontiers in Chemistry and Biology Symposium*, FCBIS, University of Pennsylvania, Philadelphia, PA, USA
20. Unusual DNA: How does it look like? January 3, **2018**, *Chernivtsi State University*, Chemistry, Chernivtsi, Ukraine
21. Structural investigation of non-canonical DNA implicated in cancer, February 17, **2017**, *Ursinus College*, Chemistry, Collegeville, PA
22. Investigation of the secondary structure of CAGAGG repeats overrepresented at replication fork collapse sites, July 17, **2015**, *U869 meeting*, Bordeaux, France
23. The tale of NMM, my favorite G-quadruplex ligand. March 11, **2015** *Northampton University*; March 12, **2015** *Imperial College, London*; March 16, **2015** *University College London, UK*; May 29 **2015** *University of Toulouse*
24. Interaction of Ru(II) polypyridyl complexes with human telomeric DNA GQ. February 19 **2015**. *Chemistry meets Biology*. IECB, Bordeaux, France.
25. Interactions between human telomeric DNA and G-quadruplex specific ligand, NMM. February 10, **2015**. *PGIG meeting*, University of Pennsylvania, Medical School, Philadelphia, USA.
26. The story of NMM, my favorite G-quadruplex ligand. November 28, **2014**, *U869 meeting*, Bordeaux, France.
27. Polypyridyl ruthenium complexes as G-quadruplex DNA ligands. July 30, **2014**. *Mid-Atlantic Seaboard Inorganic Symposium*, Temple University. The talk was delivered by the undergraduate student, Josh Turek-Herman
28. Interactions between human telomeric DNA and quadruplex specific ligand, N-methylmesoporphyrin IX, NMM. June 22-27, **2014**. *International Conference on Porphyrins and Phthalocyanines*, ICPP-8, Istanbul, Turkey
29. Interactions between human telomeric DNA and quadruplex specific ligand, N-methylmesoporphyrin IX, NMM. April 16, **2013**. *The Florida State University, Chemistry and Biochemistry*, Tallahassee, FL, USA
30. Interactions between human telomeric DNA and quadruplex specific ligand, N-methylmesoporphyrin IX, NMM. January 17, **2013**. *University of Nevada, Reno, Department of Chemistry*, Reno, NV, USA

31. Interactions between human telomeric DNA and N-methylmesoporphyrin IX, NMM. October 10, **2012**. *St. Joseph's University, Department of Chemistry*, Philadelphia, PA, USA
32. Interactions between human telomeric DNA and N-methylmesoporphyrin IX, NMM. September 27, **2012**. *Kent State University, Department of Chemistry and Biochemistry*, Kent, OH, USA.
33. Interactions between human telomeric DNA and N-methylmesoporphyrin IX, NMM. September 25, **2012**. *University of Akron, Department of Chemistry*, Akron, OH, USA.
34. Two faces of quadruplex DNA- drug target and DNA nanomaterial. March 7, **2012**. *Wake Forest University, Department of Chemistry*, Winston-Salem, NC, USA.
35. Using parallel-stranded duplexes to control formation of parallel-stranded G-quadruplexes. August 8, **2011**, *U869 meeting*, Bordeaux, France.
36. N-methyl porphyrins: Highly selective G-quadruplex DNA ligands. September 24, **2011**, *8<sup>th</sup> Undergraduate Fall Research Symposium at Haverford College*, Haverford, PA, USA. The talk was presented by my student, Jack Nicoludis.
37. Deviant DNA: When the exception becomes the rule. September 21, **2011**, *Swarthmore College faculty lunch*, Swarthmore, PA USA.
38. Two faces of quadruplex DNA- drug target and DNA nanomaterial. September 15, **2011**. *Swarthmore College Department of Chemistry and Biochemistry*, Swarthmore, PA, USA
39. Stabilization and Structural Rearrangement of Human Telomeric GQ DNA by NMM. June 27, **2011**, *University of Catania*, Catania, Italy.
40. Stabilization of human and yeast telomeric G-quadruplexes by core-methylated porphyrins. April 19, **2011**, *Troisième journée thématique de l'Equipe Chimie Biologique, Université Paul Sabatier*, Toulouse, France.
41. Synthesis, Structure, and Magnetic Spectroscopies of Non-Planar Hemes as Models of the Cytochrome *b* Heme Centers. May 31, **2008**, *Drexel University*, Philadelphia, PA, USA.
42. Synthesis, Structure, and Magnetic Spectroscopies of Non-Planar Hemes as Models of the Cytochrome *b* Heme Centers. March 7, **2008**, *Binghamton University*, Binghamton, NY, USA.

### **Oral Presentations at Scientific Meetings**

1. X-ray Structure of non-canonical DNA from telomeres of *Tetrahymena thermophila*, June 1-4, **2022**, *the 50th Middle Atlantic Regional Meeting of the American Chemical Society*, the College of New Jersey, NJ, USA
2. Structure of non-canonical DNA from *Tetrahymena thermophila* alone and with N-methylmesoporphyrin ligand, April 5-30, **2021**, *ACS Spring Virtual Meeting and Exposition*.
3. Structure of non-canonical DNA from *Tetrahymena thermophila* and beyond, Sept 17, **2020** *Nucleic acids secondary structures: G4s and beyond Webinar Series 2020-part II*

4. Structural studies of CAGAGG repeats from difficult-to-replicate regions of mammalian genome September 25-27, **2018**, *8BIONIC*, Padua, Italy. Short oral presentation to highlight the poster
5. Structural studies of CAGAGG repeats from difficult-to-replicate regions of the mammalian genome. August 19-23, **2018**, *ACS National Meeting*, Boston, MA
6. Structural studies of CAGAGG repeats from difficult-to-replicate regions of the mammalian genome *FASEB Dynamic DNA Structures in Biology* July 8-13, **2018**, Olean NY,
7. Structure and functions of CAGAGG repeat. August 20-25, **2016**, *252<sup>nd</sup> ACS National Meeting*, Philadelphia, PA
8. The tale of NMM, my favorite G-quadruplex ligand. *5th International Meeting on Quadruplex Nucleic Acids: G4thering in Bordeaux*. May 26-28, **2015**, Bordeaux, France
9. Sabharwal, N. C.; Savikhin, V.; Turek-Herman, J. R.; Nicoludis, John M.; **Yatsunyk, L. A.**; Mendez, M.; Szalai, V. A. Guanine Quadruplex DNA Nanomaterials. August 8, **2014** *Mid-Atlantic DNA Nanotechnology Symposium*, Johns Hopkins University, USA. The talk was delivered by Veronika Szalai
10. Molecular details of interaction between human telomeric DNA and quadruplex specific ligand, N-methylmesoporphyrin IX. August 19-23, **2012**, *244<sup>st</sup> ACS National Meeting*, Philadelphia, PA
11. Using parallel-stranded duplexes to control formation of parallel-stranded G-quadruplexes. August 8, **2011**, *XXI<sup>st</sup> General Congress of French Physics Society, Minicolloquium 8: Nanoscience and Health*, Bordeaux, France
12. Using parallel-stranded duplexes to control formation of parallel-stranded G-quadruplexes. June 29, **2011**, *Third International Meeting on GQ and G-assembly*, Sorrento, Italy.
13. Using parallel-stranded duplexes to control formation of parallel-stranded G-quadruplexes. Jan 11-13, **2011**, *U869 retreat*, Caudebec, France
14. Induction of parallel G-quadruplex DNA structure of (TAG<sub>3</sub>)<sub>2</sub> by ZnT4. May 18-21, **2010**, *National Science Foundation – 2010 Inorganic Chemistry Workshop*, Santa Fe, NM
15. Copper(I) binding and transfer by the N-terminus of the Wilson disease protein. March 26-30, **2006**, *231<sup>st</sup> ACS National Meeting*, Atlanta, GA
16. Models of the cytochrome *bc<sub>1</sub>* heme centers: Correlation of EPR and Mössbauer parameters with axial ligand plane dihedral angle. March 26-30, **2006**, *231<sup>st</sup> ACS National Meeting*, Atlanta, GA
17. Synthesis, Structure and Magnetic Spectroscopies of Non-Planar Hemes as Models of the Cytochromes *b* Heme Centers. February 6-9, **2003**, *Gordon Research Conferences, Graduate Research Seminar: Bioinorganic Chemistry*, Ventura, CA
18. Kinetic Studies of Ring Inversion in Paramagnetic Non-Planar Porphyrinato Complexes of High- and Low-Spin Iron(III) by NMR Techniques. September 23-26, **2002**, *SMASH (Small Molecules Are Still Hot)*, Breckenridge, CO

### **Discussion leader at National and International meetings**

1. Session Chair, Graduate Student Symposium, Biological Chemistry, August 22, **2022**, Fall *ACS National Meeting*, virtual session
2. Discussion Leader of the session on DNA and RNA at the Division of Inorganic Chemistry, Bioinorganic Chemistry. August 19-23, **2018**, Fall *ACS National Meeting*, Boston, MA
3. Discussion Leader of the session on DNA and RNA at the Division of Inorganic Chemistry, Bioinorganic Chemistry. August 20-25, **2016**, Fall *ACS National Meeting*, Philadelphia, PA
4. Discussion Leader of the session Navigating the Landscape: Structure Folding and Thermodynamics Proteins at the Gordon Research Conference on Metals in Biology: Graduate Student Seminar. January 28-31, **2016**, Ventura, CA
5. Discussion Leader of Poster flash presentation session at the 5<sup>th</sup> international meeting on quadruplex nucleic acids: G4 gathering in Bordeaux, May 26-28 **2015**, Bordeaux, France.
6. Discussion Leader of the session on DNA and RNA at the Division of Inorganic Chemistry, Bioinorganic Chemistry at the 244<sup>st</sup> ACS National Meeting, August 19-23, **2012**, Philadelphia, PA
7. Discussion Leader of the session Heme Proteins Structure and Function at the Gordon Research Conference on Metals in Biology. January 20-25, **2013**, Ventura, CA

### **Oral presentations by students**

1. David (Ming) Ye, Biophysical and X-ray crystallographic characterization of a homopurine sequence, Oligo 10, June 1-4, **2022**, *the 50th Middle Atlantic Regional Meeting of the American Chemical Society*, the College of New Jersey, NJ, USA
2. Erin Chen, Non-canonical structural motifs in Satellite III DNA repeats June 1-4, **2022**, *the 50th Middle Atlantic Regional Meeting of the American Chemical Society*, the College of New Jersey, NJ, USA
3. Dana Beseiso '21 Biophysical and Structural Characterization of N-Methyl Mesoporphyrin IX in Complex with Telomeric G-Quadruplex DNA. June 28-July 3, **2021**, *International Conference on Porphyrins and Phthalocyanines*, ICPP-11, virtual meeting
4. Kevin Li '22 Water networks in G-quadruplexes, April 5-30, **2021**, *ACS Spring Virtual Meeting and Exposition*
5. Erin Chen '23 Elucidating the structure of a four-repeat Satellite III DNA sequence, April 5-30, **2021**, *ACS Spring Virtual Meeting and Exposition*
6. Dana Beseiso '21 Biophysical Characterization and X-ray crystallography of G-quadruplex telomeric sequences from *Tetrahymena thermophila*, **2020** Fall, *ACS Virtual Meeting and Exposition*.
7. Dana Beseiso '21 Structural studies on telomeric *Tetrahymena thermophila* sequences, November 9, **2019**, *Philadelphia Inorganic Colloquium*, St. Joseph University, Philadelphia PA

8. Linda Lin '20 Crystal structure and biophysical studies of telomeric G-quadruplex DNA with a small molecule ligand, April 6, **2019**, *Annual Intercollegiate Student Chemists Convention*, Gettysburg, PA
9. Deondre Jordan '19 Pursuing the secondary structure of cancer-related DNA repeats using biophysical methods. August 19-23, **2018**, *ACS National Meeting*, Boston, MA
10. Linda Lin '20 Interaction of G-quadruplex DNA with NMM as an anticancer strategy. Apr 7, **2018**, *Intercollegiate Student Chemists Convention*, Elizabethtown, PA. **2<sup>nd</sup> place for the best Biochemistry talk**
11. Deondre Jordan '19 Biophysical efforts toward the secondary structure of DNA repeats associated with replication stress. Apr 7, **2018**, *Intercollegiate Student Chemists Convention*, Elizabethtown, PA.
12. Linda Lin '20 Interaction of telomeric DNA with NMM as an anticancer strategy. Sept 23, **2017**, *14<sup>th</sup> Undergraduate Fall Research Symposium*, Haverford College, Haverford, PA
13. Deondre Jordan '19 Mutagenesis study of intrinsically difficult-to-replicate tandem DNA sequences implicated in cancer. Aug 20-24, **2017**, *254<sup>th</sup> ACS National Meeting*, Washington, DC
14. Barrett Powell '18 Efforts toward the crystal structure of CAGAGG repeats. Aug 20-24, **2017**, *254<sup>th</sup> ACS National Meeting*, Washington, DC
15. Deondre Jordan '19 Investigating the secondary structure of non-canonical DNA implicated in Cancer. Nov 9-12 **2016**, *Annual Biomedical Conference for Minority Students (ABRCMS)*, Tampa FL. Recognized by the Biochemistry Award.
16. Barrett Powell '18 Pursuing the Secondary Structure of CAGAGG Repeat. August 20-25, **2016**, *252<sup>nd</sup> ACS National Meeting*, Philadelphia, PA
17. Josh Turek-Herman '16 at Mid-Atlantic Seaboard Inorganic Symposium at Temple, July **2014**
18. Steven Barrett '13 and Michelle Ferreira '14 Structural considerations of the NMM-Tel22 complex. Sept 22, **2012**, *9<sup>th</sup> Undergraduate Fall Research Symposium*, Haverford College, Haverford, PA
19. Jack Nicoludis '12, Sept **2011**, *9<sup>th</sup> Undergraduate Fall Research Symposium*, Haverford College, Haverford, PA

#### **Poster Presentations at National and International Meetings**

(undergraduate co-authors underlined; presenters are marked with \*)

1. Kailey N. Martin\*, L.A. Yatsunyk, Biophysical characterization and crystallization of HIF-1A construct EK June 27-July 1, **2022**, *8th International Meeting on Quadruplex Nucleic Acids*, Marienbad, Czech Republic
2. Dana Beseiso '21\* Biophysical and structural characterization of Tetrahymena thermophila G-Quadruplexes alone and in complex with N-methyl mesoporphyrin IX, April 5-30, **2021** *ACS Spring Virtual Meeting and Exposition*

3. Dana Beseiso '21\* Biophysical Characterization and X-ray Crystallography of Telomeric G-Quadruplex Structures from *Tetrahymena thermophila*. Nov 9-13 **2020**, virtual *Annual Biomedical Research Conference for Minority Students (ABRCMS)*. **Presenter awardee in the division of Biochemistry and Molecular Biology.**
4. Rubien, J.\* Yatsunyk L. A. RNA-Protein Phase Separation in Cancer: Investigating Human Satellite II RNA Structure and Function. February 15-19 **2020**, *64th Annual Meeting of the Biophysical Society* San Diego, CA. **Undergraduate Poster Award Competition Winner**
5. Lee H. K.\*; Nyovanie, S.; Tahiliani, M.; Yatsunyk, L. A. Exploring structures of SAT2 centromeres. November 9-12, **2018**, *Annual Biomedical Conference for Minority Students (ABRCMS)*, Tampa FL.
6. Lee H. K.\*; Nyovanie, S.; Tahiliani, M.; Yatsunyk, L. A. Exploring structures of Satellite 2 centromeres August 19-23, **2018**, *ACS National Meeting*, Boston, MA
7. Lin, Y.\*; Yatsunyk, L. A. Crystal structure and biophysical studies of telomeric G-quadruplex DNA in complex with a small molecule ligand. August 19-23, **2018**, *ACS National Meeting*, Boston, MA
8. Yatsunyk, L. A.\*; Powell, B.; Jordan, D.; Lin, L.; Gao, A. Structural studies of non-canonical DNA and DNA-ligand complexes. January 21-26, **2018**, *Gordon Research Conference: Metals in Biology*, Ventura, CA
9. Lin, Y.\*; Yatsunyk, L. A. Biophysical and structural studies of telomeric DNA with a small molecule ligand as an anticancer strategy. November 1-4, **2017**, *Annual Biomedical Research Conference for Minority Students*, Phoenix, AZ. Received Travel Award & Biochemistry Poster Award.
10. Powell, B.\*; Jordan, D.\*; Chen, J.\*; Brown, E.; Yatsunyk, L. A. Efforts toward the crystal structure of CAGAGG repeats. August 20-24, **2017**, *254th ACS National Meeting*, Washington, DC
11. Lin, Y.\*; Gao, A.\*; Yatsunyk, L. A. Pursuing the crystal structures of G-quadruplex DNA in complex with small molecule ligands. August 20-24, **2017**, *254th ACS National Meeting*, Washington, DC
12. Powell, B.\*; Chen, J.; Jordan, D.; Brown, E. B.; Yatsunyk, L. A. Pursuit of the Crystal Structure of CAGAGG Repeats in DNA. May 31 - June 3, **2017**, *G4thring: 6th International Meeting on Quadruplex Nucleic Acids*, Prague, Czech Republic
13. Jordan, D.\*; Chen, J.; Powell, B.; Brown, E. B.; Yatsunyk, L. A. The secondary structure of CAGAGG repeats linked to replication fork collapse. May 31 - June 3, **2017**, *G4thring: 6th International Meeting on Quadruplex Nucleic Acids*, Prague, Czech Republic
14. Yatsunyk, L. A.\*; Gao, A.; Malawi, S.; Sabharwal, N. C.; Nicoludis, J. M.; Barrett, S. P. N-Methyl mesoporphyrin IX selectively stabilizes parallel stranded G-quadruplex DNA. Jan 22-27, **2017**, *Gordon Research Conference: Metals in Biology*, Ventura, CA
15. Xiang, I. M.\* Kaufman, B.; Yatsunyk, L. A. Interactions of RHPS4 with human mitochondrial DNA. Aug 21-25, **2016**, *252st ACS National Meeting*, Philadelphia, PA

16. Jordan, D.\*; Malawi, S.\*; Barrett, P.M.; Interactions between noncanonical secondary DNA and ligands. Aug 21-25, **2016**, *252st ACS National Meeting*, Philadelphia, PA
17. Boschi, E.\*; Davis, S.; Taylor, S.; Jin, R.; Buenaventura, J.; Seigel, L; Purohit, V.; Butterworth, A.; Sheriff A.; Mastroianni, C.; Sheardy, R.; Yatsunyk, L.; Azam, M. Systematic study of G-quadruplex DNA complexes with cationic porphyrin TMPyP4 and its metal derivatives. Aug 21-25, **2016**, *252st ACS National Meeting*, Philadelphia, PA, USA.
18. Tran, V.T.; Turek-Herman, J.; Ferreira, M.; Williams, B. R.; Burgmayer, S. J. N.; Yatsunyk, L. A.\* Interactions of ruthenium polypyridyl complexes with human telomeric DNA. Jan 25-29, **2015**, *Gordon Research Conference: Metals in Biology*, Ventura, CA
19. Nicoludis, J. M.; Barrett, S. P.; Miller, S.; Yatsunyk, L. A.\* Structural insights into complex between human telomeric quadruplex DNA and N-methylmesoporphyrin IX. July 22-26, **2013**, *International Conference on Bioinorganic Chemistry*, Grenoble, France
20. Barrett, S. P.\*; Ferreira, M. N.\*; Nicoludis, J. M.; Miller, S.; Yatsunyk, L. A. Structural aspects of the interaction between human telomeric G-quadruplexes and N-methyl mesoporphyrin IX. Feb 2-6, **2013**, *Biophysical Society 57th Annual Meeting*, Philadelphia, PA
21. Barrett, S. P.; Ferreira, M. N.; Nicoludis, J. M.; Miller, S.; Yatsunyk, L. A.\* Structural aspects of the interaction between human telomeric G-quadruplexes and N-methyl mesoporphyrin IX. Jan 20-25, **2013**, *Gordon Research Conference on Metals in Biology*, Ventura, CA
22. Sabharwal, N. C.\*; Tran, V. T.\*; Williams, B.R.; Burgmayer, S. J. N.; Yatsunyk, L. Y. Investigation of the interactions between DNA and stabilizing metallic compounds. Aug 19-23, **2012**, *244st ACS National Meeting*, Philadelphia, PA
23. Nicoludis, J. M.\*; Barrett, S. P.\*; Ferreira, M. N.\*; Miller, S.; Yatsunyk, L. A. Interaction of human telomeric DNA with N-methyl mesoporphyrin IX. Aug 19-23, **2012**, *244st ACS National Meeting*, Philadelphia, PA
24. Nicoludis, J. M.; Barrett, S. P.; Yatsunyk, L. A.\* N-methylmesoporphyrin IX discriminates between different telomeric quadruplex DNA structures. Jan 22- 27, **2012**, *Gordon Research Conference on Metals in Biology*, Ventura, CA
25. Nicoludis, J. M.\*; Barrett, S. P.; Yatsunyk, L. A. Stabilization and structural rearrangement of Tel22 in the presence of NMM under low K<sup>+</sup> conditions. June 28-July 1, **2011**, *Third International Meeting on GQ and G-assembly*, Sorrento, Italy
26. Nicoludis, J. M.; Barrett, S. P.; Yatsunyk, L. A.\* Interaction of NMM with human telomeric DNA. Jan 31-Feb 5, **2011**, *Gordon Research Conference on Metals in Biology*, Ventura, CA
27. Bhattacharjee, A.; Kornfilt D.; Yatsunyk, L.\* Induction of parallel G-quadruplex DNA by ZnT4 porphyrin. Jan 30-Feb 4, **2010**, *Gordon Research Conference on Metals in Biology*, Ventura, CA

28. Butterworth, A.; Chirayath, L. A.; Taylor, S.; Yatsunyk, L. A., Azam, M.\* Interaction of cationic porphyrin and its metal derivatives with G-quadruplex DNA. Aug 16-19, **2009**, *237th ACS National Meeting*, Washington, DC
29. Butterworth, A.; Chirayath, L. A.; Yatsunyk, L. A., Azam, M\*. Interaction of cationic porphyrin and its metal derivatives with G-quadruplex DNA. Apr 18-21, **2009**, *2<sup>nd</sup> International Meeting on Quadruplex DNA*, Louisville, KY
30. Taylor, S.; Bhattacharjee, A.; Halley, D.; Marquardt, D.; Azzellini, G.; Yatsunyk, L.\* Interaction of cationic porphyrins with G-quadruplex DNA. Apr 18-21, **2009**, *2<sup>nd</sup> International Meeting on Quadruplex DNA*, Louisville, KY
31. Taylor, S.; Bhattacharjee, A.; Halley, D.; Marquardt, D.; Azzellini, G.; Yatsunyk, L.\* Interaction of cationic porphyrins with G-quadruplex DNA. Jan 25-30, **2009**, *Gordon Research Conferences on Metals in Biology*, Ventura, CA
32. Taylor, S.\*; Bhattacharjee, A.\*; Halley, D.; Marquardt, D.\*; Azzellini, G.; Yatsunyk, L. Study of cationic porphyrins' interactions with G-quadruplex DNA" Aug 17-21, **2008**, *236<sup>th</sup> ACS National Meeting*, Philadelphia, PA
33. Yatsunyk, L. A.\*; Easton, J. A.; Kim, L. R.; Sugarbaker, S. A.; Crowder, M. W.; Rosenzweig, A. C. Structure and Metal Binding Properties of ZnuA from *E. coli*. Jan **2008**, *Gordon Research Conferences on Metals in Biology*, Ventura, CA
34. Yatsunyk, L. A.\*; Rosenzweig, A. C. Copper(I) Binding and Transfer by the N-terminus of the Wilson Disease Protein. June 17-22, **2006**, *FASEB conference: Trace Element Micronutrients: Integrating Basic and Applied Research*, Snowmass Village, CO
35. Yatsunyk, L. A.\*; Rosenzweig, A. C. Copper(I) Binding and Transfer by the N-terminus of the Wilson Disease Protein. July 31-Aug 5, **2005**, *12<sup>th</sup> International Conference on Bioinorganic Chemistry*, Ann Arbor, MI
36. Yatsunyk, L. A.\*; Wernimont, A. K.; Rosenzweig, A. C. Binding of Copper(I) by the Wilson Disease Protein. Oct 23-28, **2004**, *4<sup>th</sup> International Meeting on "Copper Homeostasis and its Disorder: Molecular and Cellular Aspects"* Ischia, Italy
37. Yatsunyk, L. A.\*; Walker, F. A. Structure, NMR, EPR and Magnetic Susceptibility of [ORTPP(4-CNPy)<sub>2</sub>]ClO<sub>4</sub> complexes. Feb 6-9, **2003**, *Gordon Research Conferences, Graduate Research Seminar: Bioinorganic Chemistry*, Ventura, CA
38. Yatsunyk, L. A.\*; Walker, F. A. Low-spin Ferriheme Models of the Cytochromes: Correlation of Molecular Structure and EPR Spectral Type. July, **2002**, *EUROBIC-6*, Lund/Copenhagen, Sweden/Denmark
39. Walker, F. A.; Yatsunyk, L. A.\*; Suga, M. Correlation of Molecular Structure and EPR Spectral Type in Low-Spin Ferriheme Models of the Cytochromes, and Effects on Reduction Potentials. July, **2002**, *XXXV International Conference on Coordination Chemistry*, Heidelberg, Germany
40. Yatsunyk, L. A.\*; Walker, F. A. Kinetic Studies of Ring Inversion of Paramagnetic Non-Planar Porphyrinato Complexes of High- and Low-Spin Iron(III) by NMR Techniques. April **2002**, *43<sup>rd</sup> ENC (Experimental NMR Conference)*, Asilomar, CA



41. Yatsunyk, L. A.\*; Walker, F. A. EPR and X-Ray Crystallographic Studies of non-Planar Porphyrins. January **2002**, *Gordon Research Conferences, Graduate Research Seminar: Bioinorganic Chemistry*, Ventura, CA
42. Yatsunyk, L. A.\*; Walker, F. A. NMR, EPR and X-ray Crystallographic Studies of Paramagnetic non-Planar Porphyrinato Complexes of High- and Low-Spin Iron(III). April **2001**, *National ACS Meeting*, San Diego, CA
43. Yatsunyk, L. A.\*; Walker, F. A. NMR, EPR and X-ray Crystallographic Studies of Paramagnetic non-Planar Porphyrinato Complexes of High- and Low-Spin Iron(III). March **2001**, *42<sup>nd</sup> ENC (Experimental NMR Conference)*, Orlando, FL
44. Yatsunyk, L. A.\*; Walker, F. A. NMR, EPR and X-ray Crystallographic Studies of Paramagnetic non-Planar Porphyrinato Complexes of High- and Low-Spin Iron(III). January **2001**, *Gordon Research Conferences, Graduate Research Seminar: Bioinorganic Chemistry*, Ventura, CA
45. Panchuk, O.\*; Savitsky, A.; Ulyanitsky, K.; Parfenyuk, O.; Yatsunyk, L.; Ilashcuk, A. IV-A group dopants in CdTe, obtained by low-temperature method: electrical and optical properties. September 8-12, **1997**, *Second International School Conference. Physical Problems in Material Science of Semiconductors*, Chernivtsy, Ukraine
46. Fochuk, P.\*; Shcherbak, L.; Yatsunyk, L.; Panchuk, O.; Odulov, S. CdTe<Ge>as photorefractive material. June 11-13, **1997**, *Topical Meeting on Photorefractive Materials, Effects, and Devices (PR '97)*, Nihon Aerobic Center, Chiba, Japan
47. Fochuk, P.\*; Yatsunyk, L.; Shcherbak, L.; Panchuk, L. Point defects in CdTe crystals, doped with amphoteric elements. **1996**, *Solid State Crystals: Growth and Characterization*, Zaczopane, Poland

### **Honors and Awards**

- Pfizer Summer Undergraduate Research Fellowship Award to research student David Kornfilt for summer 2008 and to Michelle Ferreira for summer 2013
- Camille and Henry Dreyfus Foundation Faculty Start-up Award
- Katten Muchin Rosenman Travel Scholarship Award, 2006
- Nominee for Marvel Fellowship, University of Arizona, 2002
- ENC (Experimental NMR Conference) Student Travel Stipend 2001, 2002
- Mid Career Award, Department of Chemistry, University of Arizona, 2000, 2001
- Teaching Commendation, Department of Chemistry, University of Arizona, 2000

### **Student Awards**

- Barry Goldwater Scholarship honorable mention (D. Jordan '19);
- ACS, Division of Inorganic Chemistry Award for Undergraduate Research – honorable mention (B. Powell '18);
- Fulbright (S. Davis '15);

- National Science Foundation Graduate Research Fellowship (S. Barrett '13 and J. Nicoludis '12);
- Barry Goldwater Scholarship (J. Nicoludis '12);
- National Defense Science and Engineering Graduate Fellowship (J. Nicoludis '12);
- ASC-SURF fellowship (M. Ferreira '14 and D. Kornfilt '09).

### **Poster Presentations at Local and Regional Meetings**

(undergraduate co-authors underline; presenters are marked with \*)

1. Kim, H.\*; Seth, P.\*; Yatsunyk, L. A. A cytosine-rich sequence from the PDGF gene promoter forms stable i-Motif structures. Sept 22-23, **2022**, *Swarthmore Chapter Sigma Xi Poster Session*, Swarthmore, PA.
2. Ye, M.\*; Chen, E.\*; Yatsunyk, L. A. Biophysical and X-ray crystallographic characterization of a homopurine sequence, Oligo 10. Sept 22-23, **2022**, *Swarthmore Chapter Sigma Xi Poster Session*, Swarthmore, PA.
3. Chen, E.\*; Lee, H-K.; Yatsunyk, L. A. Unique structural Motif of Satellite III DNA repeats. Sept 22-23, **2022**, *Swarthmore Chapter Sigma Xi Poster Session*, Swarthmore, PA.
4. Kim, H.\*; P. Seth, P.\*; Martin, K. N.; Yatsunyk, L. A. Biophysical characterization and crystallization of PDGF DNA. June 1-4, **2022**, *the 50th Middle Atlantic Regional Meeting of the American Chemical Society*, the College of New Jersey, NJ, USA.
5. Martin, K. N.\*; Yatsunyk, L. A. Biophysical characterization and crystallization of HIF-1A construct EK. June 1-4, **2022**, *the 50th Middle Atlantic Regional Meeting of the American Chemical Society*, the College of New Jersey, NJ, USA
6. Ye, M.\*; Yun, S.\*; Yatsunyk, L. A. Biophysical characterization and crystallization of Oligo 10. Sept 30-Oct 1, **2021**, *Swarthmore Chapter Sigma Xi Poster Session*, Swarthmore, PA.
7. Li, K.\*; Yatsunyk, L. A. Unique DNA Structures in the HRAS Oncogene Promoter. Sept 30-Oct 1, **2021**, *Swarthmore Chapter Sigma Xi Poster Session*, Swarthmore, PA.
8. Pohl, C.\*; Yatsunyk, L. A. The extension of a G-tract alters G-Quadruplex folding in a disease causing mtDNA sequence. Sept 30-Oct 1, **2021**, *Swarthmore Chapter Sigma Xi Poster Session*, Swarthmore, PA.
9. Chen, E.\*; Lee H. K.; Yatsunyk, L. A. First Duplex Crystal Structure of Satellite III DNA Repeats. Sept 30-Oct 1, **2021**, *Swarthmore Chapter Sigma Xi Poster Session*, Swarthmore, PA.
10. McCarthy, S.\*; Miao, J.; Beseiso D.; Lin, L.; Yatsunyk, L. Y. Studying and solving the structure of G-quadruplex TET sequences. January 22, **2020**, *ACS - Philadelphia Local Section, Younger Chemist Committee annual poster session*, University of Sciences, Philadelphia, PA.
11. Beseiso, D.\*; Miao, J.; McCarthy, S.; Yatsunyk, L. Y. Biophysical and X-ray characterization of telomeric G-quadruplex. January 22, **2020**, *ACS - Philadelphia Local*

Section, Younger Chemist Committee annual poster session, University of Sciences, Philadelphia, PA.

12. McCarthy, S.\*; Miao, J.; Beseiso D.; Lin, L.; Yatsunyk, L. Y. Studying and solving the structure of G-quadruplex TET sequences. November 9, **2019**, *Philadelphia Inorganic Colloquium*, St. Joseph University, Philadelphia, PA.
13. Miao, J.\*; Beseiso D.; Yatsunyk, L. Y. Biophysical Characterization and Crystallization of *Tetrahymena thermophila* Telomeric Sequences. November 9, **2019**, *Philadelphia Inorganic Colloquium*, St. Joseph University, Philadelphia, PA.
14. Miao, J.\*; Beseiso D.; Yatsunyk, L. Y. Biophysical Characterization and Crystallization of *Tetrahymena thermophila* Telomeric Sequences. September 12-13, **2019**, *Swarthmore Chapter Sigma Xi Poster Session*, Swarthmore, PA.
15. Lin, L. Y.\*; Yatsunyk, L. Y. Biophysical Characterization and Crystallization of *Tetrahymena thermophila* Telomeric Sequences. September 12-13, **2019**, *Swarthmore Chapter Sigma Xi Poster Session*, Swarthmore, PA.
16. Beseiso, D.\*; Miao, J.; Yatsunyk, L. Y. Studying and Solving the Structures of G-Quadruplex TET Sequences. September 12-13, **2019**, *Swarthmore Chapter Sigma Xi Poster Session*, Swarthmore, PA.
17. Rubien, J.\*; Portz, B.; Midla, S.; Rabeler C.; Yatsunyk, L. Y.; Carone, D. The physics of cancer: human satellite II RNA structure and functions. September 12-13, **2019**, *Swarthmore Chapter Sigma Xi Poster Session*, Swarthmore, PA.
18. Jordan, D.\*; Powell, B. M.; Chen, J.; Brown, E.; Yatsunyk, L. A. Biophysical efforts toward the structure of tandem DNA repeats linked to replication stress. September 14, **2018**, *Swarthmore Chapter Sigma Xi Poster Session*, Swarthmore, PA.
19. Lee, H. K.\*; Nyovanie, S. T.; Yatsunyk, Y. A.; Tahiliani, M. Exploring Secondary Structures of SAT2 Centromeres. September 14, **2018**, *Swarthmore Chapter Sigma Xi Poster Session*, Swarthmore, PA.
20. Lin, L. Y.\*; Powell, B. M.; Yatsunyk, Y. A. Crystal structure and biophysical studies of telomeric G-quadruplex DNA in complex with a small molecule ligand. September 14, **2018**, *Swarthmore Chapter Sigma Xi Poster Session*, Swarthmore, PA.
21. Yett, A.\*; Nyovanie, S. T.; Yatsunyk, Y. A. Towards the crystal structures of VEGF and G4TERT. September 14, **2018**, *Swarthmore Chapter Sigma Xi Poster Session*, Swarthmore, PA.
22. Lin, Y.\*; Yatsunyk, L. A. Biophysical and structural studies of telomeric G-quadruplex DNA with a small molecule ligand as an anticancer strategy. May 5, **2018**, *11<sup>th</sup> Frontiers in Chemistry and Biology Symposium*, University of Pennsylvania, Philadelphia, PA, USA **3<sup>d</sup> place for the best undergraduate poster**.
23. Nyovanie S.T.\*; Yett A.; Yatsunyk L. A. Interactions between promoter region G-quadruplex DNA and N-methylmesoporphyrin IX. May 5, **2018**, *11<sup>th</sup> Frontiers in Chemistry and Biology Symposium, FCBIS*, University of Pennsylvania, Philadelphia, PA, USA

24. Powell, B. P.\*; and Yatsunyk L. A. Structural studies of CAGAGG repeats from difficult-to-replicate regions of the mammalian genome. May 5, **2018**, *11<sup>th</sup> Frontiers in Chemistry and Biology Symposium, FCBIS*, University of Pennsylvania, Philadelphia, PA, USA
25. Lin, Y.\*; Yatsunyk, L. A. Biophysical and structural studies of telomeric G-quadruplex DNA with a small molecule ligand as an anticancer strategy. April 10, **2018**, *ACS - Philadelphia Local Section, Younger Chemist Committee 13<sup>th</sup> annual poster session*, Temple, PA **2<sup>nd</sup> place for the best undergraduate poster**
26. Nyovanie, S. T.; Yett, A.\*; Yatsunyk, L. A. Interactions between promoter region G-quadruplex DNA and N-methylmesoporphyrin IX. April 10, **2018**, *American Chemical Society - Philadelphia Local Section, Younger Chemist Committee 13<sup>th</sup> annual poster session*, Temple, PA
27. Powell, B.; Jordan, D.; Chen, J.; Brown, E.; Yatsunyk, L. A. Efforts towards the Crystal Structure of a Noncanonical DNA Repeat Implicated in Cancer. October 27, **2017**, *Genetics Society of America Early Career Scientist Symposium*, New York, NY. Presented by Samantha Nyovanie\*
28. Xiang, I. M.\*; Lin, Y.; Yatsunyk, L. A. Interactions of telomeric DNA with small molecule ligands as an anticancer strategy. October 28, **2017**, *Philadelphia Inorganic Colloquium (PCI-5)*, Swarthmore, PA.
29. Jordan, D.\*; Barrett, P.\*; Chen, J.; Brown, E.; Yatsunyk, L. A. Surveying the fold of DNA repeats associated with replication fork collapse. October 28, **2017**, *Philadelphia Inorganic Colloquium (PCI-5)*, Swarthmore, PA.
30. Jordan, D.\*; Barrett, P.\*; Chen, J.; Brown, E.; Yatsunyk, L. A. Surveying the fold of DNA repeats associated with replication fork collapse. September 23, **2017**, *Haverford Undergraduate Research Symposium*, Haverford, PA
31. Jordan, D.\*; Barrett, P.\*; Chen, J.; Brown, E.; Yatsunyk, L. A. Surveying the fold of DNA repeats associated with replication fork collapse. September 22, **2017**, *Swarthmore Chapter Sigma Xi Poster Session*, Swarthmore, PA
32. Gao, A.\* Yatsunyk, L.A.; Structural Studies of Non-Canonical DNA Sequences with stabilizing ligands. October 28, **2017**, *Philadelphia Inorganic Colloquium (PIC-5)*, Swarthmore, PA.
33. Gao, A.\* Yatsunyk, L.A.; Structural Studies of Non-Canonical DNA Sequences with stabilizing ligands. September 23, **2017**, *Haverford Undergraduate Research Symposium*, Haverford, PA.
34. Gao, A.\* Yatsunyk, L.A.; Structural studies of non-canonical DNA sequences with stabilizing ligands. September 21-22, **2017**, *Sigma Xi Poster Session*, Swarthmore, PA.
35. Lin, Y.\*; Yatsunyk, L. A. Interaction of telomeric DNA with N-methyl mesoporphyrin IX as an anticancer strategy. October 28, **2017**, *Philadelphia Inorganic Colloquium (PIC-5)*, Swarthmore, PA.
36. Lin, Y.\*; Yatsunyk, L. A. Interaction of telomeric DNA with N-methyl mesoporphyrin IX as an anticancer strategy. September 23, **2017**, *Haverford Undergraduate Research Symposium*, Haverford, PA

37. Lin, Y.\*; Yatsunyk, L. A. Biophysical and structural studies of telomeric DNA with a small molecule ligand as an anticancer strategy. September 21-22, **2017**, *Swarthmore Chapter Sigma Xi Poster Session*, Swarthmore, PA.
38. Nyovanie, S. T.\*; Yatsunyk, L. A. Toward structure of the G-quadruplexes formed by VEGF and G4TERT. September 21-22, **2017**, *Swarthmore Chapter Sigma Xi Poster Session*, Swarthmore, PA.
39. Nyovanie, S. T.\*; Yatsunyk, L. A. Toward structure of the G-quadruplexes formed by VEGF and G4TERT. October 28, **2017**, *Philadelphia Inorganic Colloquium (PIC-5)*, Swarthmore, PA.
40. Nyovanie, S. T.\*; Yatsunyk, L. A. Toward structure of the G-quadruplexes formed by VEGF and G4TERT. September 23, **2017**, *Haverford Undergraduate Research Symposium*, Haverford, PA.
41. Powell, B.\*; Jordan, D.; Chen, J.; Brown, E.; Yatsunyk, L. A. Crystallization and phasing efforts of a noncanonical DNA sequence implicated in cancer. October 28, **2017**, *Philadelphia Inorganic Colloquium (PIC-5)*, Swarthmore, PA.
42. Powell, B.\*; Jordan, D.; Chen, J.; Brown, E.; Yatsunyk, L. A. Crystallization and phasing efforts of a noncanonical DNA sequence implicated in cancer. September 23, **2017**, *Haverford Undergraduate Research Symposium*, Haverford, PA.
43. Powell, B.\*; Jordan, D.; Chen, J.; Brown, E.; Yatsunyk, L. A. Crystallization and phasing efforts of a noncanonical DNA sequence implicated in cancer. September 21-22, **2017**, *Swarthmore Chapter Sigma Xi Poster Session*, Swarthmore, PA.
44. Xiang, I. M.; Lin, Y.\*; Yatsunyk, L. A. Interactions of telomeric DNA with small molecule ligands as an anticancer strategy. June 4-6, **2017**, *ACS Middle Atlantic Regional Meeting*, Hershey, PA
45. Gao, A.\*; Yatsunyk, L. A. Characterizing the dimerization of N-Methyl Mesoporphyrin IX via fluorometric and UV-Vis analysis. June 4-6, **2017**, *ACS Mid-Atlantic Regional Meeting*, Hershey, PA.
46. Powell, B.\*; Chen, J.; Jordan, D.; Brown, E.; Yatsunyk, L. A. Intrinsically difficult to replicate sequences: Crystallizing the (CAGAGG)<sub>n</sub> repeat sequence. November 5, **2016**, *Philadelphia Inorganic Colloquium (PIC-4)*, Villanova, PA
47. Jordan, D.\*; Barrett, P.M.; Brown, E.; Yatsunyk, L. A. Investigating the secondary structure of non-canonical DNA implicated in cancer. November 5, **2016**, *Philadelphia Inorganic Colloquium (PIC-4)*, Villanova, PA
48. Gao, A.\*; Yatsunyk, L. A. Fluorometric studies on the dimerization patterns of N-methyl mesoporphyrin IX; Ho, L.\*; Sheth, A.; Yatsunyk, L. A. Characterization and crystallization of G-Quadruplex forming SRC DNA. November 5, **2016**, *Philadelphia Inorganic Colloquium (PIC-4)*, Villanova, PA
49. Xiang, I. M.\*; Kaufman, B.; Yatsunyk, L. A. Interactions of human mitochondrial DNA with RHPS4. September 24, **2016**, *Haverford Undergraduate Research Symposium*, Haverford, PA

50. Jordan, D.;\* Barrett, P.M.; Brown, E.; Yatsunyk, L. A. Investigating the secondary structure of non-canonical DNA implicated in cancer. September 24, **2016**, *Haverford Undergraduate Research Symposium*, Haverford, PA
51. Powell, B.;\* Yatsunyk, L. A.; Chen, J.; Jordan D.; Tsai, Y.-C.; Shastri, N.; Brown, E. Intrinsically difficult to replicate sequences: Pursuing the structure of (CAGAGG)<sub>n</sub> repeats. September 24, **2016**, *Haverford Undergraduate Research Symposium*, Haverford, PA
52. Xiang, I. M.;\* Kaufman, B.; Yatsunyk, L. A. Interactions of RHPS4 with human mitochondrial DNA. Sept 15-16, **2016**, *Swarthmore Chapter Sigma Xi Poster Session*, Swarthmore, PA
53. Jordan, D.;\* Malawi, S.;\* Barrett, P.M.; Interactions between noncanonical secondary DNA and ligands. Sept 15-16, **2016**, *Swarthmore Chapter Sigma Xi Poster Session*, Swarthmore, PA
54. Powell, B.;\* Chen, J.; Jordan D.; Tsai, Y.-C.; Shastri, N.; Brown, E.; Yatsunyk, L. A. Intrinsically difficult to replicate sequences: Pursuing the structure of (CAGAGG)<sub>n</sub> repeats. Sep15-16, **2016**, *Swarthmore Chapter Sigma Xi Poster Session*, Swarthmore, PA
55. Liu, A.;\* Malawi, S.;\* Powell B.;\* and Yatsunyk, L. A. Interactions between non-canonical DNA and ligands. March 19, **2016**, *Philadelphia Inorganic Colloquium (PIC-3)*, University of Delaware, DE
56. Ruan, T. L.;\* Buyco, D. G.;\* Davis, S.; Yatsunyk, L. A. Interactions Between G-Quadruplex DNA and Porphyrin Ligands. March 19, **2016**, *Philadelphia Inorganic Colloquium (PIC-3)*, University of Delaware, DE
57. Chen, J.;\* Yatsunyk, L. A.; Brown, E.; Tsai, Y-Ch.; Shastri, N. Secondary Structure Investigation of (CAGAGG)<sub>n</sub> Repeats. September 17-18, **2015**, *Swarthmore Chapter Sigma Xi Poster Session*, Swarthmore, PA
58. Chen, J.;\* Yatsunyk, L. A.; Brown, E.; Tsai, Y-Ch.; and Shastri, N. Secondary Structure Investigation of (CAGAGG)<sub>n</sub> Repeats. September 19, **2015**, *Haverford Undergraduate Research Symposium*, Haverford, PA
59. Ruan, T. L.;\* Buyco, D. G.;\* Davis, S.; Yatsunyk, L. A. Interactions Between G-Quadruplex DNA and Porphyrin Ligands. September 17-18, **2015**, *Swarthmore Chapter Sigma Xi Poster Session*, Swarthmore, PA
60. Ruan, T. L.;\* Buyco, D. G.;\* Davis, S.; Yatsunyk, L. A. Interactions Between G-Quadruplex DNA and Porphyrin Ligands. September 19, **2015**, *Haverford Undergraduate Research Symposium*, Haverford, PA
61. Lee, J. H.;\* Chen, Y.;\* Yatsunyk, L. A. TCP and ZnTCP's stabilizing interactions with human telomeric DNA. September 19-20, **2014**, *Swarthmore Chapter Sigma Xi Poster Session*, Swarthmore, PA
62. Turek-Herman, J.;\* Tran, V.; Yatsunyk, L. A. Polypyridyl Ru Complexes as G-quadruplex DNA Stabilizers. September 19-20, **2014**, *Swarthmore Chapter Sigma Xi Poster Session*, Swarthmore, PA

63. Davis, S.\*; Harbeck, C.; Tran, V.; Yatsunyk, L. A. Investigation of the quadruplex binding, stabilization, and selectivity of porphyrins with varying peripheral substituents. September 19-20, **2014**, *Swarthmore Chapter Sigma Xi Poster Session*, Swarthmore, PA
64. Davis, S.\*; Bledsoe, K.\*; Harbeck, C.; Tran, V.; Yatsunyk, L. A. Investigation of the quadruplex binding, stabilization, and selectivity of macrocyclic ligands. July 30, **2014**. *Mid-Atlantic Seaboard Inorganic Symposium*, Temple University, Philadelphia, PA
65. Lee, J. H.\*; Chen, Y.\*; Yatsunyk, L. A. TCP and ZnTCP's stabilizing interactions with human telomeric DNA. July 30, **2014**. *Mid-Atlantic Seaboard Inorganic Symposium*, Temple University, Philadelphia, PA
66. Sabharwal, N.C.\*; Savikhin, V.; Turek-Herman, J.; Szalai, V.; Yatsunyk, L.A. N-methyl mesoporphyrin IX fluorescence as a reporter of strand orientation in guanine quadruplexes. October 4-5, **2013**, *Swarthmore Chapter Sigma Xi Poster Session*, Swarthmore, PA
67. Sabharwal, N.C.\*; Savikhin, V.; Turek-Herman, J.; Szalai, V.; Yatsunyk, L.A. N-methyl mesoporphyrin IX fluorescence as a reporter of strand orientation in guanine quadruplexes. September 21, **2013**, *Haverford Undergraduate Research Symposium*, Haverford, PA
68. Ferreira, M. N.\*; Yatsunyk, L. Y. Synthesis and preliminary characterization of novel polyamide derivatives of protoporphyrin-IX and mesoporphyrin-IX. October 26-27, **2012**, *Swarthmore Chapter Sigma Xi Poster Session*, Swarthmore, PA
69. Sabharwal, N. C.\*; Tran, V. T.; Williams, B.R.; Burgmayer, S. J. N.; Yatsunyk, L. Y. Investigation of the interactions between DNA and stabilizing metallic compounds. October 26-27, **2012**, *Swarthmore Chapter Sigma Xi Poster Session*, Swarthmore, PA
70. Nicoludis, J. M.\*; Barrett, S. P.; Ferreira, M. N.; Miller, S.; Yatsunyk, L. A. Interaction of human telomeric DNA with N-methyl mesoporphyrin IX. October 26-27, **2012**, *Swarthmore Chapter Sigma Xi Poster Session*, Swarthmore, PA
71. Ferreira, M. N.; Yatsunyk, L. Y. Synthesis and preliminary characterization of novel polyamide derivatives of protoporphyrin-IX and mesoporphyrin-IX. September 22, **2012**, *9<sup>th</sup> Undergraduate Fall Research Symposium at Haverford College*, Haverford, PA
72. Sabharwal, N. C.; Tran, V. T.; Williams, B.R.; Burgmayer, S. J. N.; Yatsunyk, L. Y. Investigation of the interactions between DNA and stabilizing metallic compounds. September 22, **2012**, *9<sup>th</sup> Undergraduate Fall Research Symposium at Haverford College*, Haverford, PA
73. Nicoludis, J. M.; Barrett, S.; Miller, S.; Holliday, A.; Yatsunyk, L. A. "Structural and mechanistic aspects of the interaction between human telomeric G-quadruplexes and N-methyl mesoporphyrin IX" April **2012**, *Swarthmore Chemistry Department Poster Session*, Swarthmore, PA
74. Sabharwal, N.; Nicoludis, J. M.; Yatsunyk, L. A. "Investigating the Interactions between DNA and a Platinum Metalloporphyrin" Spring **2012**, *Chemistry Department Poster Session, Swarthmore College*, Swarthmore, PA and at *Sigma Xi Chapter at the Thomas Jefferson University, Student Research Day*. Winner of the Poster competition at the latter event, Philadelphia, PA

75. Nicoludis, J. M.; Barrett, S. P.; Yatsunyk, L. A. “Stabilization and structural rearrangement of Tel22 in the presence of NMM under low K<sup>+</sup> conditions” October **2011**, *Swarthmore Chapter Sigma Xi Poster Session*, Swarthmore, PA
76. Ahluwalia, K.; Yatsunyk, L. A. “Investigation of ZnT4 Porphyrin Interactions with Telomeric DNA” October **2010**, *Swarthmore Chapter Sigma Xi Poster Session*, Swarthmore, PA
77. Nicoludis, J. M.; Barrett, S. P.; Yatsunyk, L. A. “N-methyl Mesoporphyrin IX Induces a G-quadruplex Isomerization” October **2010**, *Swarthmore Chapter Sigma Xi Poster Session*, Swarthmore, PA
78. Barrett, S. P.; Nicoludis, J. M.; Yatsunyk, L. A. “Investigating the interactions between G-quadruplex DNA and N-methyl mesoporphyrin IX” October **2010**, *Swarthmore Chapter Sigma Xi Poster Session*, Swarthmore, PA
79. Nicoludis, J. M.; Smith, J.; Johnson, F. B.; Yatsunyk L. A. “G-quadruplex Stabilization by N-methyl Mesoporphyrin IX (NMM)” September **2009**, *Swarthmore Chapter Sigma Xi Poster Session*, Swarthmore, PA
80. Evans, E.; Yatsunyk, L. A. “Chiral Sensing: Synthesis and Preliminary Characterization of Lanthanide-Porphyrin- $\beta$ -diketonates” September **2009**, *Swarthmore Chapter Sigma Xi Poster Session*, Swarthmore, PA
81. Taylor, S.; Bhattacharjee, A.; Halley, D.; Marquardt, D.; Azzellini, G.; Yatsunyk, L. A. “Interaction of Cationic Porphyrins with G-quadruplex DNA” September **2008**, *Swarthmore Chapter Sigma Xi Poster Session*, Swarthmore, PA