

Sailaja Arungundram

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Phone:(404) 751 7018

EDUCATION

- **Postdoctoral Research**, Department of Medicinal Chemistry, University of Utah, Salt Lake City
“*Chemical biology approaches to understanding the activity of Heparan sulfate biosynthesis*”.
Advisor: Professor Balagurunathan Kuberan
- **Ph. D.** Organic Chemistry, University of Georgia, Athens, GA,
Thesis Title: “*A Modular Approach for the Synthesis of Heparan Sulfate Oligosaccharides*”.
Advisor: Professor Geert-Jan Boons
- **M.S.** Organic Chemistry, New Mexico State University, Las Cruces, NM,
Advisor: Professor Stephen D. Starnes
- **MSc.**, Chemistry, University of Madras, Chennai, India

TEACHING EXPERIENCE

4-year college teaching experience:

University of Washington at Bothell, Bothell, WA Lecturer, Chemistry Sp2013-Su2013, Sp2017

Courses Taught: BCHEM 239 – “*Organic Chemistry III*” a 5-credit course in the 3-quarter organic chemistry sequence for pre-med and biology majors (Summer ‘13)

BCHEM 242 – “*Organic Chemistry Laboratory III*” a 5-credit organic laboratory course sequence for pre-med and biology majors (Summer ‘13, Spring ‘17)

BCHEM 238 – “*Organic Chemistry II*” a 5-credit course in the 3-quarter organic chemistry sequence for pre-med and biology majors a one-quarter 5-credit course (Spring ‘13)

BCHEM 241 “*Organic Chemistry Laboratory III*” a 5-credit organic laboratory course sequence for pre-med and biology majors (Spring ‘13, Spring ‘17)

UW Tacoma, WA

Lecturer, Chemistry

Wi2017- Sp2017

TESC 151 & TESC 161 – “*General Chemistry II&III*” a 6-credit courses in the 3-quarter general chemistry sequence

2-year college teaching experience:

South Puget Sound Community College, Olympia, WA Chemistry Professor Au2018-present

CHEMISTRY 161- a one-quarter 5-credit course, *General Chemistry I*
(Fall ‘18, Fall ‘19, Winter ‘20)

CHEMISTRY 162- a one-quarter 5-credit course, *General Chemistry II*
(Winter ‘19, Spring ‘20(scheduled))

CHEMISTRY 110- a one-quarter 5-credit course, *Chemical Concepts with lab*
(Winter ‘19, Spring ‘19, Fall‘19, Winter‘20 and Spring ‘20 (scheduled))

CHEMISTRY 139 - a one-quarter 5-credit course, *General Chemistry Prep.*
(Fall ‘18, Winter‘20)

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Pierce College Puyallup, Puyallup, WA

Chemistry Instructor

Wi2014-Su2018

CHEMISTRY 131- a one-quarter 6-credit course, *Introduction to Organic and Biochemistry (Hybrid)* Fall '16, Fall '17, Winter '14)

CHEMISTRY 121- a one-quarter 5-credit course, *Introduction to Chemistry (Hybrid)* Fall '16, Fall '17, Winter '18)

CHEMISTRY 139- a one-quarter 5-credit course, *General Chemistry Prep. (Winter '17)*, Fall '15, Summer '15)

CHEMISTRY 100 - a one-quarter 5-credit course, *Preparatory Chemistry* (Winter '18, Fall '16, Fall '17, Spring '16, Spring '15, Spring '14)

South Seattle College, Seattle, WA

Chemistry Instructor

Wi2015- Sp2016

Courses Taught/Teaching: CHEMISTRY 131 - a one-quarter 5-credit course, *Intro to Organic and Biochem* (Spring '16, Spring '15)

CHEMISTRY 121 - a one-quarter 5-credit course, *Intro to Chemistry.* (Winter '16, Fall '15)

CHEMISTRY 139- a one-quarter 5-credit course, *General Chemistry Prep.* (Winter '16)

Graduate teaching experience:

Postdoctoral Fellow at the University of Utah, Salt Lake City, UT

2011-2012

- Co-instructor MDCH 7895: Carbohydrate Chemistry
 - Instructed a 1 quarter course on carbohydrate chemistry to a class of medicinal chemistry graduate students
 - Instructed a didactic session on NMR Approaches for determining heparan sulfate structure as part of Glycosciences Training Camp
- Trained junior graduate students in carbohydrate synthesis

Graduate Teaching Assistant at the University of Georgia, Athens, GA

2004-2005

Graduate Teaching Assistant at New Mexico State University, Las Cruces, NM

2000-2003

- Instructed CHEM 2211, CHEM 2212, CHEM 211 and CHEM 311/312 laboratory courses, tutoring chemistry courses, grading exams and lab reports
- Trained one first year junior graduate student in carbohydrate synthesis and two undergraduates and one high school research student in bench chemistry techniques

EXTERNAL FUNDING

- Participating and contributing to the Promoting Active Learning and Mentorship network (PALM). As a PALM fellow, I receive \$2000 in funding to develop my skills for teaching general chemistry lecture topics.

TEACHING HIGHLIGHTS:

Experience teaching in both blended and face-to-face format, skilled in chemical instrumentation, instructing lecture and laboratory courses, new course design, exploring active-learning methods, implementing novel teaching classroom-technology tools, developing/enhancing laboratory experiments.

PARTICIPATION IN PEDAGOGY WORKSHOPS AND FACULTY DEVELOPMENT ACTIVITIES

- ACS New Faculty Institute, Pasadena, CA, June 2019
- Faculty Community of Practice focused on STEM pedagogy, South Puget Sound Community College, AY 2018-'19
- Faculty Community of Practice focused on Teaching Science to non-majors, South Puget Sound Community College, Fall 2019-Spring 2020
- POGIL summit, Kirkland, WA, Apr 2019
- Accessible course design, Dumas Bay Center, Federal Way, August 2017
- FELLOW, SHINE Institute (Seattle's Hub for Industry-driven Nanotechnology Education)

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- *Faculty Learning Committee on Active Learning*, South Seattle College (Fall '15- Spring '17)
- *Puget Sound ACS Women Chemists' Retreat*, Pack Forest Conference Center, May '15
- *Train the Nanoteacher workshop (June '14)*, North Seattle College
- *Faculty development workshops -Pierce College Puyallup (Spring '15, '14) and South Seattle College (Fall '14)*

COLLEGE COMMITTEE WORK

- *Course Review Committee*, South Puget Sound Community College (currently serving)
- *Chemistry Courses (introductory and general chemistry) Outlines Review*
- *Committees for development of Student Learning Outcomes Rubrics –Communications Rubric (Spring '15-'16)*, South Seattle College
- *Curriculum and Instructions Committee (Winter '16)*, South Seattle College
- *Contextualization of Curriculum for Nursing and Health Science majors supported through HEET grant program (Spring '15)*

AWARDS

- Scholarship award from ACS New Faculty Institute, June 2019
- Faculty Development Grant Travel Awards to attend the Annual Conferences of Washington College Chemistry Teacher's Association (WCCTA), Sleeping Lady Mountain Retreat, Leavenworth, WA- 2019, 2018, 2017, 2016, 2015
- Foundation Grant, South Seattle College to attend Puget Sound ACS Women Chemists' Retreat, Pack Forest Conference Center, May 2015
- Faculty Development Grant Travel Award to attend the 2015 Winter Assessment, Teaching, and Learning Retreat organized by SBCTC, March 5th, Rainbow lodge, North Bend.
- Graduate Student Poster Presentation Award, 2009 UGA Conference on Drug Discovery, University of Georgia, Athens, GA, November 5, 2009
- Board of Regents travel award, University of Georgia, 238th ACS National Meeting, Washington, DC, August 16-20, 2009

EXPERIENCE WITH LEARNING TECHNOLOGIES

- Proficient in Learning Management Systems such as Canvas and Panopto lecture capture software
- Skilled in screen annotation and recording applications such as Screencastomatic, Ink2go and Bamboo Paper
- Practiced user of online meeting spaces such as Zoom, Cranium cafe and canvas conferences for extended office hours.
- Proficiency in microsoft office applications such as Powerpoint, Word and Excel for data analysis and graphing and google docs for collaborative assignments
- Skilled in online quiz applications such as Socrative, Poll everywhere, Kahoot It and I-clickers.

VOLUNTEER EXPERINCE

- *Education Committee Puget Sound American Chemical Society*, Scholarship Awards team
- *Annual Expand Your Horizons STEM Workshops for Middle school girls*, Workshop co-presenter
- *Seattle Association for Women in Science (Seattle-AWIS)*, Webmaster (2015-2017), Programs Co-chair (2014-2015),

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SELECTED RESEARCH EXPERIENCE

University of Utah, Salt Lake City, UT Postdoctoral Fellow 2011-2012
Mentor: Professor Kuberan (Kuby) Balagurunathan

University of Georgia, Athens, GA Research Associate May-Dec2010

University of Georgia, Athens, GA Ph. D. Candidate Graduate Research Assistant Aug 2005-May 2010

Advisor: Professor Geert-Jan Boons

- Achieved synthesis of heparin-like oligo- and polysaccharides by chemo-enzymatic methods
- Synthesized of fluorescent compounds for imaging animal injury models and oligosaccharide conjugation
- Designed and executed new synthetic routes, optimized conditions for parallel combinatorial synthesis of a diverse library of heparan sulfate oligosaccharides
- Explored linker technologies for conjugating oligosaccharides to carrier proteins and microarrays

Synthesized porphyrin based anion receptors for chloride, bromide, fluoride, phosphate, hydrogen sulfate and nucleotide anions and studied their anion binding characteristics by NMR and UV-Vis spectroscopy

CHEMICAL INSTRUMENTATION EXPERIENCE

- *Instrumentation and Chromatography*: NMR (1D and 2D-600, 500 and 300 MHz) spectrometry, mass spectrometry (MALDI-TOF, ESI-MS, LC-MS), UV-Vis, IR, GC and fluorescence spectroscopy, automated purification systems such as HPLC and CombiFlash® flash chromatography systems

SELECTED PUBLICATIONS AND PATENTS

- Chemical Biology Approaches to Understanding Heparan Sulfate Biosynthesis Enzymes, Manuscript in preparation
- Chemical Modification of Heparin and Heparosan. Karthik Raman, Balagurunathan Kuberan, **Sailaja Arungundram***. (*corresponding author) *Methods Mol. Biol.* Volume 1229, 2015, pp 31-36.
- Chemogenesis of an Antiangiogenic Glycosaminoglycan. Karthik Raman, Sailaja Arungundram, Balagurunathan Kuberan. *ACS Med. Chem. Lett.* 2014 5 (6), 644-646.
- A Modular Synthesis of Heparan Sulfate Oligosaccharides for Structure-Activity Relationship Studies. Sailaja Arungundram, Kanar Al-Mafraji, Jinkeng Asong, Franklin E. Leach III, I. Jonathan Amster, Andre Venot, Jeremy E. Turnbull, and Geert-Jan Boons. *J. Am. Chem. Soc.* 2009, 131, 17394-17405.
- **Highlighted in C&E News in News of the Week Editorial**: Borman, S. 2009. Giant Leap For Obstinate Targets. **Chemical & Engineering News** 87 (47): 10. <http://pubs.acs.org/cen/news/87/i47/8747notw7.html>
- Boons, Geert-Jan; Venot, Andre; **Arungundram, Sailaja**; Al-Mafraji, Kanar. (University of Georgia Research Foundation, Inc. Athens, GA, US). Heparan Sulfate Synthesis. US Patent 20120142560, June 07, 2012; *Scifinder* 2012: 20120607. **(PATENT)**

SELECTED PRESENTATIONS

- *Modular Approach for Synthesis of Library of Heparan Sulfate Fragments Exhibiting for Alzheimer's BACE1 Inhibitory Activity*. UGA Conference on Drug Discovery, University of Georgia, Athens, GA, November 5, 2009 (Awarded Graduate Student Poster Award)
- 238th ACS National Meeting, Washington, DC, August 16-20, 2009 (Talk)