Curriculum Vitae

**Jutta Beneken Heller**

###### Contact Information

University of Washington, Tacoma

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###### Education

**2001 Ph.D. Biophysics, Johns Hopkins University School of Medicine, Baltimore, MD**

Dissertation Title*: Characterization of the Lamina-Associated Polypeptide 2 (LAP2) and Structure of the Homer EVH1 Domain-Peptide Complex*;Advisor: Dr. Daniel J. Leahy

**1995 B.A. Molecular Biology, Princeton University, Princeton, NJ**

Senior Thesis Title: *Mutations in the c-myc transcription factor NM23-H2/PuF: Effects on protein oligomerization, nucleoside diphosphate kinase activity, and* in vitro *DNA-binding*;Advisor:Dr. Edith Postel

##### Teaching Experience

**Senior Lecturer, University of Washington, Tacoma, WA, School of Interdisciplinary Arts and Sciences (SIAS), Division of Sciences and Mathematics**

January 2011 – present (full-time since September 2011, Senior Lecturer since September 2017)

* Courses taught include: Introduction to Biology I, II and III (TBIOL 120, 130, & 140), Human Biology and the Environment (TBIOL 240), Genetics and Society (TBIOL 270), Molecular Biology (TBIOL 304), Foundations in Biomedical Sciences (TBIOMD 310), Biomed Research Experience (TBIOMD 495), Introduction to Science (TCORE 1xx)
* Responsibilities include: Preparing lectures and laboratory sessions, writing and grading in-class exams, maintaining office hours for student consultation, student advising, curriculum development
* Major coordinator for B.S. in Biomedical Sciences, September 2015-June 2018
* Past curriculum coordinator for Introductory Biology courses in the Environmental Sciences Program
* Additional service responsibilities

**Adjunct Faculty, Olympic College, Bremerton, WA, Division of Mathematics, Engineering, Science & Health**

September 2010 – March 2011

* Course taught: Human Biology with Lab (BIOL 175)

**Lecturer, Loyola University Chicago, IL, Department of Biology**

August 2004 – June 2010

* Taught undergraduate and graduate-level courses in General Biology, Genetics, and Molecular Biology

**Assistant Graduate Program Director, Master of Arts Medical Sciences Program, Loyola University Chicago, IL**

August 2009 – June 2010

* Reviewed applications for the Master of Arts, Medical Sciences (MAMS) graduate program in the Department of Biology
* Worked with the Director on curricular issues
* Received training in Pre-Health Professions Advising and student counseling
* Developed an advanced genetics course with a strong human health focus for graduate students

Student and Peer Mentoring

Mentor in the **Achieving Change in our Communities for Equity and Student Success (ACCESS in STEM) program**, UW Tacoma, 2018 - present

* + - * This scholarship program is a National Science Foundation-funded scholarship aimed at providing support for low-income students with a strong high school GPA who are interested in majoring in STEM

Mentor in the Student Success Mentoring Program (SSMP) at UW Tacoma, November 2013 – 2016

* + - * This program connects UWT faculty/staff with students in professional / academic mentoring relationships

Mentor in the student leadership certificate program LEAD (Learn. Engage. And. Develop) at UW Tacoma, February 2014 – 2016

* + - * This certificate is designed to give students the needed leadership and teamwork skills to become more productive teammates, classmates, co-workers, students and citizens.

Pedagogical Training and Professional Development

Attended the “Strategies for Cultivating Inclusion in STEM” Symposium, UW Seattle, WA, January 2020

Participated in Project Biodiversify workshop, organized by the Division of Science and Mathematics UW Tacoma, WA, October 2019

Participated in the Strengthening Education through Excellence and Diversity (SEED) Institute, UW Tacoma, WA, June 2019

Presented on Teaching Squares at NW Biology Instructors annual conference, McMinnville, Oregon, May 2019

Presented Poster at UW Teaching and Learning Symposium, UW Seattle, April 2019 – won poster competition

Participated in “Courageous Engagement” Professional Development workshop series, UW Tacoma, April, 2018

Attended a webinar training on “Student Inclusion on College Campuses: Eliminating the Barriers for Students with Disabilities”, UW Tacoma, WA, March 2018

Attended Association of American Colleges and Universities (AAC&U) STEM Conference, San Francisco, CA, November 2017

Mentor in the SIAS Peer Mentoring program, UW-Tacoma, September 2017-present

Co-organizer of the School of Interdisciplinary Arts and Sciences (SIAS) Teaching Squares pilot program, UW-Tacoma, September 2017-present

Participated in the 5-day STEM Leadership Institute, Project Kaleidoscope (PKAL), AAC&U, Adamstown, MD, July 2017

Participated in SafeCampus Violence Prevention and Response Training, UW Tacoma, June 2017

Co-organizer of SIAS Teaching Forum, UW Tacoma, WA, September 2016-May 2017

Attended AAC&U STEM Conference, Seattle, WA, November 2015

Participated in AAC&U Institute on General Education and Assessment, Oklahoma, June 2015

Attended UW Teaching and Learning Symposium, Seattle, April 2015 & 2017

* + co-presented poster on Course-Based Undergraduate Research Experiences (CURE) in 2015

Attended the “Fostering an Ethic of Place” conference organized by the Washington Center @ Evergreen State College, January 2015

Attended the Northwest Partnership for Life Sciences Education (PULSE) meeting, October 2014

Attended the Northwest Biology Instructor’s Organization annual meetings, 2012-2015, 2017

* + co-presented a workshop on “Catching Cheaters: Identifying Salmon Market Substitution in Introductory Biology Labs”, 2014 and 2017

Attended the “Biology Leadership Conference” in Tucson, AZ. Organized and sponsored by Pearson Education, March 2009.

Attended “Focus on Teaching” workshops, organized by the Center for Professional Development, Loyola University Chicago, 2007-2010

Participated in an “Active Learning” workshop, University of Illinois at Chicago, Chicago, IL. Organized by Pearson Education and the Department of Biological Sciences, September 2007

Member of the National Association of Advisors for the Health Professions (NAAHP), 2009-2010

STEM Community Outreach

Presented “STEM Storytime” to pre-schoolers (age 3-5), Tacoma, WA, January 2019

Presented public lecture at Franke Tobey Jones retirement home, Tacoma, WA, October 2018 & March 2019

Presented at RAIN’s Bioengineering Summer Camp, Tacoma, WA, July 2018

Volunteer at the annual interactive community-based STEM night at the Multicultural Child and Family Hope Center, Tacoma, WA, 2017

Volunteer at the annual interactive community-based STEM Nights at Totem Middle School, Kent, WA, 2015-present

Program judge and faculty advisor for Math-Science-Leadership (MSL) summer program at UW Tacoma, 2013-2018

Participated in Residential Advisor Event for Court 17 Apartments (“See your own DNA!”), October 2016

Participated in Peace Community Center Science Enrichment Program at McCarver Elementary School, Tacoma, WA, November 2016

Participated in campus-visit by McCarver Elementary School students by assisting with hands-on science demo, UW-Tacoma, November 2016.

###### Additional Teaching Experience

* + - * Junior Science and Humanities Symposium, Loyola University Chicago, November 2005

- Developed and led a workshop on “How to write a scientific paper” for high school students

* + - * Advanced Placement Summer Institute, Loyola University Chicago, Summers 2006-2008, 2010

- Designed, developed and led a review sessions on topics in general biology, molecular biology techniques, and advances in biotechnology for Advanced Placement (AP) Biology teachers

###### Additional Experience in Education

Pearson Education Inc./Benjamin Cummings publisher, August 2010 – present

* + - * Subject matter expert for MasteringBiology, an online learning resource for students.
      * Accuracy reviewer for textbook chapters and textbook resources (e.g. chapter quizzes).
      * Author of online interactive tutorials on topics of translation, transcription, and DNA replication (August – December 2010)

Mad Science of Chicago®, provider of hands-on science activities for children aged 5-12

* + - * Instructor for summer and winter day-camps, 2007–2009

## Awards

2017 Nominated for the Distinguished Teaching Award, UW Tacoma

2010 Edwin T. and Vivijeanne F. Sujack Award for Teaching Excellence, Loyola University Chicago College of Arts and Sciences

2008 Master Teacher Award, Loyola University Chicago College of Arts and Sciences

2001 David E. Rogers Award for Community Service, Johns Hopkins School of Medicine

###### Service

Member of the UW-Tacoma Academic Policy and Curriculum Committee, September 2017 – present

Member of UW-Tacoma Executive Council, September 2015 – June 2018

Member of School of Interdisciplinary Arts and Sciences (SIAS) Lecturer Reappointment committee, UW Tacoma, October 2017

Member of School of Interdisciplinary Arts and Sciences (SIAS) Lecturer Promotion committee, UW Tacoma, Autumn 2018

Participated in Transfer Advisor Workshops, UW Tacoma, December 2016 & 2017

Participated in JumpStart program for incoming students, UW Tacoma, June 2017

Presented mock lectures to prospective students, UW Tacoma, 2016-present

Member of several SIAS faculty search committees, UW Tacoma, September 2011- present

Co-coordinator of the Collaborative Learning program in the Division of Sciences and Mathematics, UW Tacoma, Autumn 2014-2017

Member of the School of Interdisciplinary Arts and Sciences Fellows Group to revise the lower division curriculum, UW Tacoma, January 2015 – June 2016

Member of Tacoma Paper and Stationery Building Reprogramming Committee, UW Tacoma, Spring 2015-February 2016

Key author and contributor to the proposal for a new B.S. degree in Biomedical Sciences at UW Tacoma, Summer 2014

Member of Search & Interview Committees (School of Interdisciplinary Arts & Sciences at UW Tacoma)

Mentor in the Student Success Mentoring Program (SSMP) at UW Tacoma, November 2013 – 2016

* + - * This program connects UWT faculty/staff with students in professional / academic mentoring relationships

Mentor in the student leadership certificate program LEAD (Learn. Engage. And. Develop) at UW Tacoma, February 2014 – 2016

* + - * This certificate is designed to give students the needed leadership and teamwork skills to become more productive teammates, classmates, co-workers, students and citizens.

Chair of the departmental Teaching Assessment and Excellence committee, Loyola University Chicago, Fall 2006 – June 2010:

* + - * Classroom visitations and assessments of Biology faculty
      * Organize and moderate informal intra-departmental discussions of teaching and classroom management techniques
      * December 2006: Organized a visit and lecture by Dr. Scott Freeman on active learning techniques

Member of the departmental Instructor Promotion Committee (Elected), Loyola University Chicago, Fall 2009

Reviewer of applications for the Master of Arts in Medical Sciences (MAMS) Program, Loyola University Chicago, IL, June 2008 – June 2010

Member of two departmental search committees for new non-tenure track full-time faculty, Loyola University Chicago, Summer 2007 & Summer 2008

Member of the departmental search committee for a new tenure-track faculty member in the field of Neuroscience, Loyola University Chicago, Jan 2006 – Feb 2006

Member of the University-wide Radiation Safety Committee, Loyola University Chicago, 2007 - present

###### Courses Taught

* Introduction to Biology I (TBIOL 120, fka TESC 120, 6 credits) – UW Tacoma, WA.

- This lower-division majors course introduces the rules of genetic inheritance and the process of evolution by natural selection. It explores the diversity of life and the adaptations that allow organisms to thrive in habitats ranging from mountaintops to the deepest oceans. Additional topics include how organisms interact with each other and their environment, and how humans impact natural ecosystems.

* Introduction to Biology II (TBIOL 130, fka TESC 130, 6 credits) – UW Tacoma, WA.

- This lower-division majors course covers molecular and cellular biology, including basic chemistry, metabolism, cell structure and function, and the application of molecular techniques to environmental studies.

* Introduction to Biology III (TBIOL 140, fka TESC 140, 6 credits) – UW Tacoma, WA.

- This lower-division majors course covers anatomy, physiology and development within the animal and plant kingdoms.

* “You and Your Genes” (TCORE 122, 5 credits) – UW Tacoma, WA.

- This lower-division non-majors course introduces students to basic concepts of genetics and molecular biology, including social and historical aspects.

* “Diseases that Changed the World” (TCORE 102/112/122, 5 credits) – UW Tacoma, WA.

- This lower-division non-majors course investigates human diseases that significantly affected the course of history. It covers the biology, transmission and treatment of these diseases, as well as their historical, medical, ethical and social impact on world history.

* Foundational Skills in Biomedical Sciences (TBIOMD 310, 5 credits) – UW Tacoma, WA.

- This upper-division majors course trains students to read and process existing scientific literature, formulate a hypothesis, collect data to test a hypothesis, write-up research findings, and present findings orally utilizing both individual and group work.

* Biomedical Sciences Senior Seminar (TBIOMD 410, 3 credits) – UW Tacoma, WA.

- This upper-division majors course develops skills for evaluating and presenting capstone projects and using this capstone experience to open opportunities towards future careers.

* Biomedical Research Experience (TBIOMD 495, 3 credits) – UW Tacoma, WA.

- This upper-division majors course provides opportunities to complete group or individual biomedical sciences research projects carried out within a structured course. This work is publicly presented.

* Genetics and Society (TBIOL 270, fka TESC 370, 5 credits) – UW Tacoma, WA.

- This lower-division non-majors course covers key advances and principles in genetics and molecular biology, providing background to critically evaluate controversial topics in biotechnology facing contemporary society.

* Molecular Biology (TBIOL 304, fka TESC 380, 6 credits) – UW Tacoma, WA.

- This upper-division majors course focuses on advanced principles of gene expression at the molecular level, emphasizing transcription and translation. It provides hands-on experience applying molecular biology techniques to isolation and characterization of genes from various organisms in research-driven projects.

* Human Biology and the Environment (TBIOL 240, fka TESC 240, 5 credits) – UW Tacoma, WA.

- This lower-division non-majors course introduces human biological systems with a focus on environmental influences. It explores the structure and function of the major body systems (cardiovascular, endocrine, pulmonary, nervous, digestive, immune, and excretory), and the scientific and social issues implicit in addressing human health and environmental issues.

* Careers in the Biomedical Sciences (TBIOMD 199, fka TESC 199, 1 credit) – UW Tacoma, WA.

- This weekly seminar and workshop series provides students with the opportunity to explore current requirements for applications to medical, veterinary, dental, pharmacy, and other professional schools.

* Environmental Seminar (TESC 200, 1 credit) – UW Tacoma, WA.

- This course provides exposure to current scientific research and policy initiatives. It includes presentations by researchers, discussion of recent literature, and participation in educational workshops and volunteer activities.

* Environmental Science Research Seminar (TESC 310, 3 credits) – UW Tacoma, WA.

- This course is required for all Environmental Science B.A. and B.S. students. It covers essential skills and tools needed to succeed in upper-division environmental science courses. Topics include: scientific ways of thinking, investigating, reading, and writing science.

* Human Biology with Lab (BIOL 175) – Olympic College, Bremerton, WA.

- This course covers the basic organization of molecules, cells, tissues, and organ systems in the human body.

* General Biology I (BIOL 101) – Loyola University Chicago, IL.

- This course is the first in a two-semester survey course and covers fundamental principles of Biology including: introduction to the scientific method, basic biological chemistry; cell structure and function; energy transformations; mechanisms of cell communication; cellular reproduction; and principles of genetics.

* General Biology II (BIOL 102) – Loyola University Chicago, IL.

- This course is a continuation of BIOL 101 and covers fundamental principles of Biology including: evolutionary theory; general principles of ecology; study of plant structure and function; and comparative animal physiology.

* Genetics (BIOL 282) – Loyola University Chicago, IL.

- This course surveys principles and processes of genetic inheritance, gene expression, molecular biology, developmental, quantitative, population and evolutionary genetics. Students develop understanding of Mendelian principles of inheritance, chromosome and DNA structure and replication, gene expression, molecular biology, genetic bases of development and other biological processes.

* Molecular genetics (BIOL 382/482) – Loyola University Chicago, IL.

- This course covers the molecular details of genetic processes such as DNA replication, RNA and protein synthesis, gene regulation and genome organization. Students gain a detailed understanding of (1) basic molecular biology techniques, (2) the macromolecules involved in genetic processes, and (3) published experiments that underlie our knowledge of these processes.

* Molecular Biology Laboratory (BIOL 390) – Loyola University Chicago, IL.

- This is an advanced laboratory course teaching students the basic principles and techniques of molecular biology, including bacterial cloning, polymerase chain reaction, restriction mapping, agarose gel electrophoresis, and DNA sequencing. The first half of the course is instructor-led, while the second half of the course focuses on independent research projects that are a required component.

* Advanced Genetics (BIOL 409) – Loyola University Chicago, IL.

- This course is part of the curriculum in the M.A. in Medical Sciences (MAMS) program at Loyola University Chicago. The MAMS program focuses on the development of intellectual skills and mastery of scientific concepts needed to succeed in medical school.

Research Experience

2005 - 2006 Research Associate Loyola University Chicago, Chicago, IL

(Summers only) Dept. of Biology

Advisor: Dr. Kim C. Williamson

2001 – 2004 Research Associate The University of Chicago, Chicago, IL

Dept. of Biochemistry and Molecular Biology

Advisor: Dr. Carl C. Correll

1996 – 2001 Graduate Thesis Johns Hopkins University Medical School, Baltimore, MD

Dept. of Biophysics and Biophysical Chemistry

Advisor: Dr. Daniel J. Leahy

1995 - 1996 Laboratory Rotations Johns Hopkins University Medical School, Baltimore, MD

Dept. of Physiology: Dr. Peter G. Gillespie

Dept. of Biophysics: Dr. Daniel J. Leahy

Dept. of Neuroscience: Dr. Richard L. Huganir

1994 - 1995 Undergraduate Thesis Princeton University, Princeton, NJ

Dept. of Molecular Biology

Advisor: Dr. Edith H. Postel

## Publications

Correll, C.C., Yang, X., Gerczei, T., **Beneken, J.**, and Plantinga, M.J. (2004) RNA Recognition and base flipping by the toxin sarcin. *J. Synchrotron Rad*., **11**, 93-96.

Correll, C.C., **Beneken, J.**, Plantinga, M.J., Chan, Y.-L., and Lubbers, M. (2003). The common and the distinctive features of bulged-G motifs based on a 1.04 Å resolution structure. *Nucl. Acids. Res.,* **31**, 6806-6818.

**Beneken, J.**, Tu, J.C., Xiao, B., Yuan, J.P., Worley, P.F., and Leahy, D.J. (2000). Structure of the Homer EVH1 Domain-Peptide Complex Reveals a New Twist in Polyproline Recognition. *Neuron*, **26**, 143-154.

Postel, E.H., Weiss, V.H., **Beneken, J**., and Kirtane, A. (1996). Mutational Analysis of NM23-H2/NDP Kinase Identifies the Structural Domains Critical to Recognition of a c-*myc* Regulatory Element. *Proc. Natl. Acad. Sci. USA*, **93**, 6892-6897.

## Research Presentations

**Beneken J.**, Plantinga, M.J., Chan, Y-L., Lubbers, M., and Correll, C.C. (2003). Common and Distinctive Features of Bulged-G Motifs Based on a 1.04 Å Resolution Structure. Poster Presentation at the Rust Belt RNA Meeting, Mt. Sterling, OH.

**Beneken, J.**, and Correll, C.C. (2002). *In Vitro* Binding Assays of Initiation Factor 2 with the Sarcin/Ricin Loop of the 23S rRNA. Poster Presentation at the Rust Belt RNA Meeting, Mt. Sterling, OH.

**Beneken, J.**, and Correll, C.C. (2001). Assembly of core proteins on the box C/D region of the U3 RNA. Poster Presentation at the Rust Belt RNA Meeting, Mt. Sterling, OH.

**Beneken, J.**, Tu, J.C., Xiao, B., Yuan, J.P., Worley, P.F., and Leahy, D.J. (2000). Structure of the Homer EVH1 Domain-Peptide Complex Reveals a New Twist in Polyproline Recognition. Poster Presentation at the Fourteenth Symposium of The Protein Society, San Diego, CA.

**Beneken, J.**, Tu, J.C., Xiao, B., Yuan, J.P., Nuriya, M., Worley, P.F., and Leahy, D.J. (1999). Crystal Structure of the Homer EVH1 Domain. *Proceedings of the Third International Conference on Molecular Structural Biology, Vienna, Austria, 74*. (Poster Presentation)

##### Volunteer Experience

July 2010 – January 2011, Naval Undersea Museum, Keyport, WA

Worked with the collections department, greeted visitors, and helped with gift shop operations.

January 2004 – June 2010, Frank Lloyd Wright Preservation Trust, Chicago, IL

Interpreter and Tour Guide at the Frederick C. Robie House (National Historic Landmark).

August 2001 – June 2010, Museum of Science and Industry, Chicago, IL

Participated in “Science Connections”, a volunteer-based program designed to familiarize museum visitors with various concepts, such as Genetics, Human Body, Navy, Flight, etc. Helped design program flow for the Genetics program. Helped train new volunteers in the Genetics program. Interacted with museum visitors of all ages.

July 2007, Loyola University Chicago, Participated in the University-wide Service Day

#### Laboratory Skills

Molecular biology:

Recombinant DNA cloning techniques; protein expression in *E.coli*, analytical DNA/RNA/protein gel electrophoresis

Biochemistry:

Recombinant protein purification and chromatography techniques; purification of RNA and DNA by gel electrophoresis; electrophoretic mobility shift assays

Biophysics:

Crystallization of RNA, protein, RNA-protein complexes, and protein-peptide complexes; X-ray crystallographic data collection, analysis and structure solution; fluorescence spectroscopy

Tissue/cell culture:

Cell transfection, cell line maintenance

**Language Skills**

Native fluency in German, working knowledge of Italian and French.