

# Curriculum Vitae

## Ariane Jansma

3900 Lomaland Drive  
San Diego, CA 92106

(619) 849-2623  
[ajansma@pointloma.edu](mailto:ajansma@pointloma.edu)

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### Current Employment

**Point Loma Nazarene University** *San Diego, CA* Jan 2, 2014 - Present  
Associate Professor  
*Department of Chemistry*

### Education

**University of California, San Diego** *San Diego, CA* 2004 – 2009  
PhD in Biochemistry  
Dissertation Title: Structural and Functional Analysis of the Chemokine CCL27 and Expression of the Chemokine Receptor D6  
Sponsor: Tracy Handel, PhD

**San Diego State University** *San Diego, CA* 2001 – 2004  
MS in Analytical Chemistry  
Thesis Title: Development and Implementation of a Micro-Coil Capillary Flow NMR System in a Drug Discovery Environment  
Sponsors: Bernhard Geierstanger, PhD and John Love, PhD

**Pepperdine University** *Malibu, CA* 1996 – 2001  
BS in Chemistry  
BA in Spanish, *Cum Laude*

### Teaching Experience

**Point Loma Nazarene University** *San Diego, CA* 2014 - Present

- Courses taught
  - Chemistry/Biology 4050
  - Chemistry/Biology 4050 Lab
  - Chemistry 1003
  - Chemistry 1003 Lab
  - Chemistry 1053
  - Chemistry 1053 Lab
  - Chemistry 1052
  - Biochemistry for PA students

**The Scripps Research Institute** *La Jolla, CA* 2012

- Mentor to high school summer intern
  - Designed appropriate research project for high school student
  - Supervised lab work, notebook and final presentation
- Mentor for Students Modeling a Research Topic (SMART) program
  - Program involves utilizing 3-dimensional printing to create a protein model
  - Directed 8 students and their teacher throughout the project

## Research Experience

**Point Loma Nazarene University** *San Diego, CA* 2014 – Present  
Associate Professor

- Effect of phosphorylation on the oncogenic properties of the protein E7 from high risk HPV
- Evaluation of the co-structure between the HPV oncoprotein E7 and the transcription factor TAZ2
  - Multi-dimensional  $^{15}\text{N}$ - $^1\text{H}$ ,  $^{13}\text{C}$ - $^1\text{H}$  NMR experiments on single and double-labeled samples
  - Collaborative project with The Wright Lab at The Scripps Research Institute
- Structural and functional analysis of PDZ domains and their interaction with viral peptides
  - Design, expression and purification of both PDZ domains and viral peptides
  - Multi-dimensional  $^{15}\text{N}$ - $^1\text{H}$ ,  $^{13}\text{C}$ - $^1\text{H}$  NMR experiments on single and double-labeled samples
  - *In vitro* assays to investigate binding interactions

**The Scripps Research Institute** *La Jolla, CA* 2010 – 2013  
Postdoctoral Research Associate  
*Wright Laboratory*

- Analysis of protein:protein interactions by NMR
  - Design, expression and purification of WT and mutant forms of protein binding partners
  - Multi-dimensional  $^{15}\text{N}$ - $^1\text{H}$ ,  $^{13}\text{C}$ - $^1\text{H}$  NMR experiments on single and double-labeled samples

**UCSD Department of Chemistry and Biochemistry** *San Diego, CA* 2004 – 2009  
PhD Candidate

- NMR analysis of both Monomeric and Oligomeric forms of WT and mutant CCL27
  - Multi-dimensional  $^{15}\text{N}$ - $^1\text{H}$ ,  $^{13}\text{C}$ - $^1\text{H}$  NMR experiments on single-labeled samples
  - PFG diffusion experiments on unlabeled samples to measure diffusion coefficients
  - Development of  $^{13}\text{C}$ -edited PFG diffusion experiment to measure GAG-induced oligomerization
- Functional analysis
  - WT and mutant CCL27 to determine receptor binding epitopes and design of antagonist forms
  - Chemotaxis, transendothelial migration, and calcium flux with chemokine receptor CCR10
  - GAG binding studies using affinity chromatography, solubility assays, as well as HSQC chemical shift perturbation analysis and edited PFG diffusion by NMR

**UCSD School of Pharmacy** *San Diego, CA* 2007 – 2009  
Acting NMR Facilitator

- Coordinated set-up of two 600 MHz systems
  - Bruker 5.0mm Cryo and 1.7mm CryoProbes
- Train all users on both IconNMR and Topspin
- Implemented IconNMR Automation Software for natural product chemists
- Troubleshooting and routine maintenance of hardware and software

**Genomics Institute of the Novartis Foundation (GNF)** *San Diego, CA* 2002 – 2004  
Research Associate, NMR Spectroscopy

- Facilitator for three Bruker NMR systems
  - 600 MHz NMR with 5.0mm CryoProbe
  - 400 MHz NMR system with room temperature QNP probe and automation platform
  - 400 MHz NMR system with micro-coil flow probe and automation platform
- Small molecule structure elucidation support for medicinal chemistry
- Development and implementation of automated micro-coil flow NMR system

**DuPont Pharmaceuticals/Deltagen Research** *San Diego, CA* 2001 – 2002  
Contracted NMR Spectroscopist

- Facilitator for two Varian NMR systems
  - 500 MHz NMR with interchangeable 5.0mm, 3.0mm and flow probes
  - 300 MHz NMR with automation platform

## Community Outreach and Education

- **PTA Executive Board, Curie Elementary** 2018 –Present
  - Coordinate design and sale of school spirit-wear
  - Organize and host Back-to-School night and after-school program fair
  - Recording secretary for all meetings
- **Board of Directors, Friends of Rose Canyon** 2011 –Present
  - Help coordinate guided nature walks and education programs for local schools and the community of University City
  - Regularly Act as spokesperson at community events focused on issues involving Rose Canyon
- **Office of Educational Outreach Events** *The Scripps Research Institute*
  - National SMART Conference participant 2012
  - Fulton K-8 School Career Day Speaker 2012
- **AWIS Outreach Committee** 2008 – 2013
  - Focus on bringing science to the community
  - Participation includes judging science fairs, liquid nitrogen demonstrations at elementary schools, presenting a general chemistry laboratory workshop for seeing impaired students, running a booth at the San Diego Science Expo
- **Angel Tree Coordinator** *Prison Fellowship* 2008 – 2013
  - Program provides Christmas gifts to children of incarcerated felons
  - Coordinator responsibilities involve contacting caregivers to determine appropriate gifts, assigning children to sponsors, fund raising and collecting donations, hosting the annual Angel Tree Party for children, caregivers and sponsors (and Santa Claus), overseeing deliveries to all families who cannot attend the party and updating the incarcerated parents

## Honors and Awards

- Research and Special Project (RASP) Grant Fall 2019
- Research and Special Project (RASP) Grant Fall 2018
- Research and Special Project (RASP) Grant Fall 2017
- Alumni Association Faculty Grant Spring 2016
- Research and Special Project (RASP) Grant Fall 2015
- Wesleyan Center Scholar Award Fall 2014
- Research and Special Projects (RASP) Grant Fall 2014
- Alumni Association Faculty Grant Spring 2014
- NRSA Postdoctoral Fellowship, NIH 2010 - 2013
- Molecular Biophysics Training Grant, NIH 2006 - 2008
- Teaching Assistant Excellence Award, Dept. of Chem/Biochem, UCSD 2006

## Professional Affiliations

- Protein Society
- Faculty of 1000 Associate Faculty Member
- American Chemical Society (ACS)
- California Analytical Chemist Organization (CACO), San Diego
- Association for Women in Science (AWIS)

## Rigorous Peer Reviewed Publications

Risor, M.\*; **Jansma, A. L.\***; Medici, N.§; Thomas, B.§; Dyson, H. J.; Wright, P. E. “Characterization of the high-affinity fuzzy complex between oncogenic E7 from high-risk HPV and the TAZ2 domain of CBP.” *Manuscript submitted to FEBS Journal August 2021*

**\*Authors contributed equally, §Point Loma Nazarene University student**

Lineback, J. E.; **Jansma, A. L.\*** “PyMOL as an instructional tool to represent and manipulate the myoglobin/hemoglobin protein system.” *J. Chem. Ed.* **2019**, 96 (11), 2540 – 2544

**\* Corresponding Author**

**Jansma A. L.**, Martinez-Yamout M. A., Liao R., Sun P., Dyson H. J., Wright P. E. “The high-risk HPV16 E7 oncoprotein mediates interaction between the transcriptional coactivator CBP and the retinoblastoma protein pRb.” *J. Mol. Biol.*, **2014**, 426(24): 4030 – 48.

Severin, I.; Gaudry, J. P.; Johnson, A.; Kungl, A.; **Jansma, A.**; Gesslbaur, B.; Mulloy, B.; Power, C.; Proudfoot, A. I. E.; Handel, T. M. **2010**. Characterization of the chemokine CXCL11 – heparin interaction suggests two different affinities for glycosaminoglycans. *J. Biol. Chem.* 285 (23), 17713 – 17724

**Jansma, A.**; Kirkpatrick, J.; Hsu, A.; Handel, T. M.; Nietlspach, D. **2010**. NMR Analysis of the Structure, Dynamics, and Unique Oligomerization Properties of the Human Chemokine CCL27. *J. Biol. Chem.* 285 (19), 14424 – 14437.

**Jansma, A.**; Handel, T.; M. Hamel, D. **2009**. Homo- and hetero-oligomerization of chemokines. *Methods Enzymol.* 461, 31 – 50

Winter, J. M.; **Jansma, A.**; Handel, T. M.; Moore, B. S. **2008**. Formation of the Pyridazine Natural Product Azamerone by Biosynthetic Rearrangement of an Aryl Diazoketone. *Angewandte Chemie*, 48 (4), 767-770

**Jansma, A.**; Zhang, Q.; Li, B.; Ding, Q.; Uno, T.; Bursrlaya, B.; Liu, Y.; Furet, P.; Gray, N.; Geierstanger, B. **2007**. Verification of a Designed Intramolecular Hydrogen Bond in a Drug Scaffold by Nuclear Magnetic Resonance Spectroscopy. *J. Med. Chem.* 50 (24), 5875 – 5877

**Jansma, A.**; Chuan, T.; Albrecht, R. W.; Olson, D. L.; Peck, T. L.; Geierstanger, B. H. **2005**. Automated Microflow NMR: Routine Analysis of Five-Microliter Samples *Anal. Chem.* 77, 6509 – 6515

## Unpublished Scholarly Outcomes

Dorrell, M.; Woelburn, H.; **Jansma, A.L.\*** “The Effect of Phosphorylation on the Oncogenic Properties of the Protein E7 from High-Risk HPV.” **2019 Submitted Application** for the Academic Research Enhancement Award (AREA) (R15) Grant to the National Institute of General Medical Sciences (NIGMS) of the National Institute of Health (NIH).

**\*Corresponding Principle Investigator**

Lambie, C.\*; Wright, J.; **Jansma, A.L.** “Expression and Purification of the Disordered PDZ Binding Domain of the NS5 Protein from Tick-Borne Encephalitis Virus.” *Oral Presentation, April 2019* West Coast Biological Sciences Undergraduate Research Conference (WCSBURC), San Diego, CA

Orlando, R.\*; Mazza, K.; Malone, M.; **Jansma, A.L.** “NMR Spectroscopy to Evaluate the Phosphorylation State of the Oncogenic Protein E7 from a Hyper-Virulent Form of HPV.” *Oral Presentation, April 2019* West Coast Biological Sciences Undergraduate Research Conference (WCSBURC), San Diego, CA

Malone, M.\*; Mazza, K.; Orlando, R.; **Jansma, A.L.** “The Effect of Phosphorylation on the Oncogenic Properties of the Protein E7 from High-Risk HPV.” *Oral Presentation*, **April 2019** West Coast Biological Sciences Undergraduate Research Conference (WCSBURC), San Diego, CA

**Jansma, A.L.** “High-Risk HPV E7 Oncoprotein Interaction with TAZ2.” **January 2018**, *Invited Seminar Speaker*, Pepperdine University, Malibu, CA.

Morin, L.\*; Wheelock, M.; Steele, T.; Long, A.; **Jansma, A.L.** “Analysis and assignment of the 1H-15N HSQC of the PDZ-1 domain from the Zonula Occludens Protein 1.” *Poster Presentation* **April 2017**, American Chemical Society (ACS) National Conference, San Francisco, CA

Medici, N.\*; Thomas, B.\*; Holmes, B.; Morin, L.; Wright, P.E.; **Jansma, A.L.** “The application of NMR paramagnetic relaxation enhancement to analyze the relative orientations of the HPV oncoprotein E7 in complex with the TAZ2 domain of CBP.” *Oral Presentation*, **April 2016** West Coast Biological Sciences Undergraduate Research Conference (WCSBURC), San Diego, CA