

Christopher L. DeCiantis, Ph.D.

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Education

- PhD, Chemistry, concentration in Biochemistry, Syracuse University, College of Arts and Sciences (GPA: 3.95/4.00) Thesis: "A FRET Based Bistable Oligonucleotide Switch, AlloSwitch, Designed for Specific Recognition of HIV-1 NCp7 and Use in High Throughput Screening"
- Graduate Coursework in Chemistry at Massachusetts Institute of Technology (GPA: 4.10/5.00)
- BS, Chemistry with a concentration in Biochemistry and a minor in Biology, St. John Fisher College, *Summa Cum Laude* with Honors; Rochester, NY (GPA: 3.85/4.00)

Professional Experience

April 2017 – Present

Medical College of Wisconsin – Pediatric Rheumatology – Research Scientist - 10x Core Manager

- Primary research in T cell immune development, differentiation, regulation, and tolerance
- Mucosal Immunology, licensing of foreign antigens in juvenile mammal maturation
- Irritable Bowel Disease (IBD) and Crohn's Disease (CD) investigated in transgenic mice
- Interaction of microbiome with host immunology and autoimmune response
- Strong verbal and written communication skills; including lab notebook keeping, group presentations, contribution to grant writing
- Facilitate 10x Core instrument selection, purchase and installation, train new users, manage user schedules, oversight of maintenance of core instruments
- Animal handling, FACS, flow cytometry, single cell RNA sequencing (10x Genomics), *in situ* hybridization of mRNA (RNAscope), qPCR, cell culture, adoptive transfer, bioinformatics

March 2016 – April 2017

University of Wisconsin, Madison – Associate Researcher

- Research in pre-mRNA processing. Investigating spliceosome complex assembly and function.
- Preparation of RNAs containing fluorophores, single molecule analysis of conformational changes and assembly pathways associated with RNA splicing, and biochemical assays of spliceosome formation and function
- Strong verbal and written communication skills; including lab notebook keeping, group presentations, contribution to SOPs and creation of lab protocol manuals
- Nucleic acid biochemistry, microscopy, single molecule biochemistry, biophysics, RNA biochemistry, ribonucleoproteins (RNPs), CoSMoS (Co-localization Single Molecule Spectroscopy), fluorescence microscopy

March 2008 – September 2013

Regado Biosciences – Scientist, Discovery

- Aptamer SELEX (systematic evolution of ligands by exponential enrichment)- Discovery and development of novel oligonucleotide aptamer based therapeutics through *in vitro* selection methods and iterative truncation and modification process to optimize efficacy and manufacturability

- Lab techniques including: Protein cloning, expression and purification, cell culture handling, denaturing and non-denaturing Gel electrophoresis (PAGE), Northern Blot, Western Blot analysis, ELISA, assay development and optimization, PCR, RT-PCR, RNA transcription, Oligonucleotide extraction and isolation, gene cloning, restriction enzyme digests
- Bioinformatic analysis of oligonucleotide sequence families; utilize knowledge of RNA structural and thermodynamic properties to interpret primary sequence data
- Strong verbal and written communication skills; including lab notebook keeping, group presentations, contribution to SOPs (original drafts and initiation of revision control documents), regulatory filing (chemical composition section of IND), and patent application (detailed description of the invention and claims sections) writing

June 2001 – January 2008

Syracuse University – Graduate Fellow/Assistant – PhD Candidate – Advisor: Philip N. Borer, Ph.D.

- Developed and Validated FRET based assay into an automated High Throughput Screening (HTS) platform for drug discovery involving HIV Nucleocapsid (NCp7) including proof of concept screening of ~2000 compound National Cancer Institute (NCI) Diversity Set
- Thermodynamic calculation of RNA, DNA and chimeric nucleic acid sequence secondary structures based on Nearest Neighbor Method
- Developed a sensitive and selective bistable nucleic acid probe utilizing fluorescent markers
- Designed a Fluorescence Resonance Energy Transfer (FRET) based assay for nucleic acid-protein interactions
- Consultant to spin-off company, AptaMatrix, founded resulting from this research
- Supervision and management of undergraduate students and mentoring of graduate students

August 2000 – June 2001

Massachusetts Institute of Technology – Graduate Assistant – Advisor: JoAnne Stubbe, Ph.D.

- Research Assistant - Yeast Ribonucleotide Reductase - *S. cerevisiae*
- Teaching Assistant for 5.07 Biological Chemistry I – Fall Semester
- Teaching Assistant for 5.08 Biological Chemistry II – Spring Semester

May 1998 – August 1999; April 2000 – July 2000

Eastman Kodak Company Research Labs, Rochester, NY, USA – Cooperative Internship Program

- Preparation and analysis of Silver halide emulsions with electron microscopy
- Experience includes use of a Philips CM20 Analytical Electron Microscope (AEM) and a JOEL 100CX Transmission Electron Microscope (TEM) as well as EDAX energy dispersive analysis

September 1999 – March 2000

Kodak Limited, Harrow, Middlesex, UK – Casual Employee

- Electron Microscopy group in the Analytical and Coating Technology Division within R&D
- Preparation and analysis of Silver halide samples with a Philips FEG 30XL Scanning Electron Microscope (SEM)
- Development and Validation of a new assay method for SEM based 2D and 3D studies of Silver halide emulsions

Related Skills and Experience

- Equipment and techniques used: HPLC, FPLC, GC, TLC, IR, UV-Vis, Mass Spec, FRET, Fluorescence spectrometry, Laboratory Automation Workstation (Biomek 2000), Multi-detection

plate reader (SpectraMax Gemini), cryogenic techniques, vacuum technology, and digital imaging and databasing

- Experience with Microsoft Excel, Word, Power Point, Adobe Photoshop, Adobe Illustrator, AnalySIS, LIMS, VectorNTI, RStudio, MATLAB, Molecular Modeling programs, and many other Windows based programs
- General Chemical and Biochemical lab experience including safety and radiation training

Publications, Patents and Presentations: Additional available upon request

- Rusconi, C.; Layzer, J. M.; Mahanty, S. K.; DeCiantis, C. L.; Redick, K (Regado Biosciences, USA) Nucleic acid regulation of growth arrest-specific protein 6 (GAS6). European Patent Filing WO2014066142 A1; filed Oct 17, 2013
- Borer, P. N.; Hudson, B. S.; DeCiantis, C. L. (Syracuse University) Switchable nucleic acids for diagnostics, screening and molecular electronics. U.S. Patent 7,718,784; issued May 18, 2010
- Jeschke, J. C., Mayne, C. G., Ziegelbauer, J., DeCiantis, C. L., Singh, S., Kumar, S. N., Suchi, M., Iwakura, Y., Drobyski, W. R., Salzman, N. H., and Williams, C. B., *Mucosal Immunology*, (2018) 11, pp 1127–1137 “A model of TH17-associated ileal hyperplasia that requires both IL-17A and IFN γ to generate self-tolerance and prevent colitis”
- DeCiantis, C. L., Jensen, D. K., Hudson, B. S., and Borer, P. N., *Biochemistry*, (2007); 46 (32) pp 9164 - 9173 “A Nucleic Acid Switch Triggered by the HIV-1 Nucleocapsid Protein”
- Schwartz, L. J., DeCiantis, C. L., Chapman, S., Kelley, B. K., and Hornak, J. P., *Langmuir*, 15, 5461 (1999): “Motions of Water, Decane, and Bis(2-ethylhexyl)sulfosuccinate Sodium Salt in Reverse Micelle Solutions”
- DeCiantis, C. L., Jensen, D. K., Yule, R., Hudson, B. S., and Borer, P. N., 5th International Retroviral Nucleocapsid Symposium, (poster presentation 2005): Montreal, Canada, “A FRET Based Bistable Oligonucleotide Switch for High Throughput Screening of Anti-NC Drug Candidates”

Other Activities and Honors

- Volunteer Assistant Lab Facilitator at the Museum of Life and Science 2014-2016
- Syracuse University Graduate Fellowship 2001-2002, 2003-2004
- University Travel Award: 5th International Retroviral Nucleocapsid Symposium, 2005
- St. John Fisher College Full Merit Scholarship Recipient 1995-1999
- President of St. John Fisher College Chemistry Club 1998-1999
- St. John Fisher College Graduation Award for Excellence in Natural Sciences 1999
- Fr. Joe Travato Award for Service in Campus Ministry at St. John Fisher College 1999
- Executive Officer in St. John Fisher College Campus Ministry Council from 1997-1998
- Resident Advisor (RA) at St. John Fisher College from 1997-1998
- National Science Foundation - Research Education For Undergraduates (NSF-REU) Participant at Rochester Institute of Technology (RIT) Advisor: Joseph Hornak 1997
- Dean's List all eight semesters at St. John Fisher College from 1995-1999