

BIOGRAPHICAL SKETCH			
NAME <b>William D. Martin</b>		POSITION TITLE COO/CIO, EpiVax, Inc.	
eRA COMMONS USER NAME (credential, e.g., agency login) WDMARTIN			
EDUCATION/TRAINING			
INSTITUTION AND LOCATION	DEGREE (if applicable)	MM/YY	FIELD OF STUDY
Southeastern University	BA	05/84	Economics
Arizona State University		1978-81	Economics and Statistics
American International College		1977-78	Business Administration

#### A. Personal Statement

Mr. Martin joined Dr. De Groot's team in 1998 as a consultant. In that capacity, Mr. Martin ported the firm's main asset, EpiMatrix, from Excel to Oracle. In September of 1999, Mr. Martin accepted a full time position at EpiVax as CIO and has since expanded his responsibilities to include not only care and maintenance of EpiVax technological assets, but also our bioinformatics and business process assets as well. As acting Director for Bioinformatics, Mr. Martin has dramatically revised and expanded the firm's epitope prediction capabilities and created new applications for identifying cross-reactive or "promiscuous" epitopes. Mr. Martin has also taken on day-to-day project management responsibility for many of EpiVax's ongoing development projects, including acting as PI on two previously awarded SBIR Phase I grants. During his time at EpiVax, Mr. Martin, working closely with Dr. Dr Groot, has developed a computerized vaccine design toolkit that is particularly applicable to global health. Using advanced computer programs, Dr. De Groot and Mr. Martin screen the protein sequences of disease isolates drawn from all over the world for common antigenic structures, balancing conservation among know isolates with specificity for a broad array of HLA alleles. These globally relevant protein fragments (putative T cell epitopes) are then combined to create an entirely new vaccine antigen capable of inducing pathogen specific immune memory across a wide array of HLA phenotypes and disease strains. As Chief Operating Officer, Mr. Martin also manages many day-to-day operations, including corporate finances, contracting and client relations, project management, human resources management, purchasing, and general business administration. Prior to joining the team at EpiVax, Mr. Martin was a Director at PAREXEL International, where he was responsible for the development and maintenance of management, data handling, and data analysis systems used in the execution of phase II, III, and IV clinical trials. Mr. Martin is enthusiastic about the application of the EpiMatrix system to vaccine design for emerging and reemerging infectious diseases and looks forward to working on the research proposed in this application.

#### B. Positions and Honors

##### Corporate Positions

1984 – 1989	Research Assistant, Programmer, and Systems Analyst, Abt Associates
1990 – 1999	Director, Information Services, PAREXEL International
1998 – 1999	Independent Consultant. Clients included: The TB/HIV Research Lab at Brown University, Abt Associates, and Pharmaceutical Development Associates (PDA).
1999 – present	Chief Information Officer, EpiVax, Inc., Providence, RI.

#### C. Selected Peer-reviewed Publications

- De Groot, A.S., **Martin, W.**, Moise, L., Guirakhoo, F., Monath, T. Analysis of ChimeriVax Japanese Encephalitis Virus Envelope for T-Cell Epitopes and Comparison to Circulating Strain Sequences. *Vaccine*. 2007;(47):8077-84
- Koren, E., De Groot, A.S., Jawa, V., Beck, K.D., Boone, T., Rivera, D., Li, L., Mytych, D., Koscec, M., Weeraratne, D., Swanson, S., **Martin, W.** Clinical validation of the "in silico" prediction of immunogenicity of a human recombinant therapeutic protein. *Clin Immunol*. 2007;124(1):26-32.

3. De Groot, A.S., Rivera, D.S., McMurry, J.A., Buus, S., **Martin, W.D.** Identification of Immunogenic HLA-B7 “Achilles’ heel” Epitopes Within Highly-Conserved Regions of HIV. *Vaccine*. 2008;26(24):3059-71. PMID: PMC2553891.
4. Moise, L., McMurry, J.A., Pappo, J., Lee, D.S., Moss, S.F., **Martin, W.**, De Groot, A.S. Identification of genome-derived vaccine candidates conserved between human and mouse-adapted strains of *H. pylori*. *Hum Vacc*. 2008;4(3):219-223. <<http://www.landesbioscience.com/journals/vaccines/MoiseHV4-3.pdf>>.
5. Moise, L., McMurry, J.A., Buus, S., Frey, S., **Martin, W.D.**, De Groot, A.S. In Silico-Accelerated Identification of Conserved and Immunogenic Variola/Vaccinia T-Cell Epitopes. *Vaccine*. 2009 Oct 30;27(46):6471-9. PMID: PMC2838212.
6. Gregory, S.H., Mott, S., Phung, J., Lee, J., Moise, L., McMurry, J.A., **Martin, W.**, De Groot, A.S. Epitope-based Vaccination against Pneumonic Tularemia. *Vaccine*. 2009;27:5299-306. PMID: PMC2772204.
7. De Groot, A.S., Ardito, M., McClaine, E.M., Moise, L., **Martin, W.** Immunoinformatic comparison of T-cell epitopes contained in novel swine-origin influenza A (H1N1) virus with epitopes in 2008-09 Conventional Influenza Vaccine. *Vaccine*. 2009;29(17):3299-3309.
8. Schanen, B.C., DeGroot, A.S., Moise, L., Ardito, M., McClaine, E., **Martin, W.**, Wittman, V., Warren, W.L., Drake III, D.R. Coupling sensitive *in vitro* and *in silico* techniques to assess cross-reactive CD4+ T cells against the swine-origin H1N1 influenza virus. *Vaccine*. 2011;27(42):5740-47. PMID: PMC3130614.
9. Moss, S.F., Moise, L., Lee, D.S., Kim, W., Zhang, S., Lee, J., Rogers, A.B., **Martin, W.**, De Groot, A.S. HelicoVax: Epitope-based therapeutic *Helicobacter pylori* vaccination in a mouse. *Vaccine*. 2011;29(17):2085-91. PMID: PMC3046230.
10. DeGroot, A.S., Ardito, M., Moise, L., Gustafson, E.A., Spero, D., Tejada, G., **Martin, W.** Immunogenic consensus sequence T helper epitopes for a pan-Burkholderia Biodefense Vaccine. *Immunome Research*. 2011 Nov 21;7(2):3. <<http://immunome-research.net/journal/index.php/immunome/article/view/3/7>>.
11. Messitt, T.J., Terry, F., Moise, L., **Martin, W.**, DeGroot, A.S. A comparison of two methods for T cell epitope mapping: “cell-free” *in vitro* versus immunoinformatics. *Immunome Research*. 2011 Nov 20;7(2):6. <<http://immunome-research.net/journal/index.php/immunome/article/view//6>>.
12. Ardito, M., Fueyo, J., Tassone, R., Terry, F., Dasilva, K., Zhang, S., **Martin, W.**, DeGroot, A., Moss, S., Moise, L. An integrated genomic and immunoinformatic approach to *H.pylori* vaccine design. *Immunome Research*. 2011 Nov20;7(2):25. <<http://immunome-research.net/journal/index.php/immunome/article/view//25>>.
13. Moise, L., Song, C., **Martin, W.D.**, Tassone, R., De Groot, A.S., Scott, D.W. Effect of HLA DR epitope de-immunization of Factor VIII *in vitro* and *in vivo*. *Clinical Immunology*. 2012 Mar;142(3):320-31. Epub 2011 Dec 8. PMID: PMC3288193.
14. De Groot, A.S., Levitz, L., Ardito, M., Skowron, G., Mayer, K., Buus, S., Boyle, C.M., **Martin, W.D.** Further progress on defining highly conserved immunogenic epitopes for a global HIV vaccine: HLA-A3-restricted GAIA Vaccine epitopes. *Hum Vaccin Immunother*. 2012 Jul 1;8(7):987-1000.
15. Levitz, L., Koita, O.A., Sangare, K., Ardito, M.T., Boyle, C.M., Rozehnal, J., Tounkara, K., Dao, S.M., Koné, Y., Koty, Z., Buus, S., Moise, L., **Martin, W.D.**, De Groot, A.S. Conservation of HIV-1 T cell epitopes across time and clades: Validation of the immunogenic HLA-A2 epitopes selected for the GAIA HIV vaccine. *Vaccine*. 2012 Dec 14;30(52):7547-7560. PMID: PMC3522424.

#### **D. Research Support**

##### **Current Support**

NIH/NIAID

PI: A.S. De Groot/**W. Martin**

07/20/2009 – 06/30/2014

1U19AI082642-01

*Translational Immunology Research and Accelerated [vaccine] Development (TRIAD)*

The purpose of this project is to promote the use of immunoinformatics tools to accelerate the design and development of vaccines for emerging infectious diseases and biowarfare agents.

Role: Subcontract Program Director/Principal Investigator

NIH/NIAID

PI: A.S. De Groot/**W. Martin**

05/01/2011 – 04/30/2013

1R21AI090359-01A1

*Novel H1N1 influenza protection via cross-reactive immunity*

The purpose of this project is to explore the potential for cross-strain immunogens to induce immune responses that may give rise development of a universal influenza vaccine.

Role: Co-Investigator, Director of Bioinformatics

**Pending Support**

NIH/NIAID

PI: A.S. De Groot

07/01/2013 – 06/30/2015

1R43AI108106-01

*Pan-encephalitic viral vaccine development by reverse vaccinology*

The purpose of this project is to develop a single, preventive vaccine against three equine encephalitis viruses that are Category B priority bioterror pathogens. The vaccine, based on precisely targeted components, is designed to stimulate immunity while also being less likely to provoke unanticipated biologic effects.

Role: Co-Investigator, Director of Bioinformatics

NIH/NIAID

PI: A.S. De Groot

07/01/2013 – 06/30/2015

1R43AI107998-01

*Vector-mediated, DNA-based HCV vaccination in an HLA transgenic mouse model*

The purpose of this project is to develop a therapeutic hepatitis C virus (HCV) vaccine with HCV epitope-expressing dendritic cells (DCs) to provide a vector-mediated approach to treating chronic, HCV infected patients.

Role: Co-Investigator, Director of Bioinformatics

NIH/NIAID

PI: A.S. De Groot

07/01/2013 – 06/30/2015

1R43AI108002-01

*Universal tick-borne disease vaccine development via reverse vaccinology*

The purpose of this project is to develop a broad-spectrum vaccine for inducing localized acquired resistance to the tick itself that either blocks pathogen transmission or inhibits infection, a sound and novel strategy for reducing the public health impact of Lyme disease and a myriad of other tick-borne diseases world-wide.

Role: Co-Investigator, Director of Bioinformatics

NIH/NIAID

PI: A.S. De Groot

12/01/2012 – 11/30/2014

1R43AI104133-01

*TulyVax: In Vivo Validation of an Epitope-Driven Tularemia Vaccine – Pending final payline*

The purpose of this project is to develop a preventive vaccine against Francisella tularensis type A, the potential bioterror agent that can inflict lethal disease with very low dose exposure. The vaccine, based on precisely targeted components, is designed to stimulate immunity while minimizing unanticipated biologic effects; a vaccine prototype has prevented tularemia disease in mice with humanized immune systems.

Role: Co-Investigator, Director of Bioinformatics

**Completed Support (Within Past 3 Years)**

DARPA

PI: M. Poznansky (Mass Gen Hosp) 04/18/2012 – 10/17/2012

*Rapid, Standardized Vaccine Development and Testing System for Emerging Infectious Diseases: Evaluation of Immune Response to GAIA HIV-Self Assembling Vaccine in HLA DR3 Transgenic Mice, Phase I*

The purpose of this project is to demonstrate the ability to integrate separate technologies into a single, standardized process for rapidly generating and testing new vaccines. This segment of a pilot study will evaluate the immunogenicity of GAIA HIV Class II promiscuous epitopes delivered in tandem with Mtb Hsp70 as part of a self-assembling nanoparticle in the HLA DR3 transgenic mouse model.

Role: Bioinformatics/Immunoinformatics Director

NIH/NIAID

PI: A.S. De Groot/W. Martin

02/01/2011 – 06/30/2012

1U19AI082642-01

*Translational Immunology Research and Accelerated [vaccine] Development (TRIAD) (Parent)*

*iVAX - Vaccine and Diagnostic Design Toolkit for CCHI funded programs (Discretionary Funds) (Subcontract)*

The purpose of this project is to make a set of tools and techniques accessible to CCHI funded investigators.

Role: Subcontract Program Director/Principal Investigator

NIH/NIAID PI: A.S. De Groot 02/01/2011 – 04/30/2012  
2U19AI057234-06

*Translational Immunology Research and Accelerated [vaccine] Development (TRIAD)/IVAX  
iVAX - Vaccine and Diagnostic Design Toolkit for CCHI Funded Programs*

The purpose of this project is to promote the use of immunoinformatics tools to accelerate the design and development of vaccines for emerging infectious diseases and biowarfare agents.

Role: Subcontract Program Director/Principal Investigator

NIH/NIAID PI: A.S. De Groot 09/01/2007 – 08/31/2010  
1R43AI075830-01

*Optimization of a Multivalent Tuberculosis Vaccine*

The purpose of this project is to optimize methods of adjuvanting and delivering (dose, route) an epitope-based vaccine for TB.

Role: Co-PD/PI, Bioinformatics Director

NIH/NIAID PI: A.S. De Groot 09/30/2008 – 08/31/2010  
1R21AI078800-01

*Optimization of HIV Vaccine Subunit Delivery*

The purpose of this project is to optimize delivery of a multi-epitope HIV vaccine.

Role: Bioinformatics and Statistics Director

NIH/NIAID PI: A.S. De Groot 09/17/2009 – 08/31/2010  
3R21AI078800-02S1

*Optimization of HIV Vaccine Subunit Delivery (Supplement)*

The purpose of this project is to optimize delivery of a multi-epitope HIV vaccine.

Role: Bioinformatics and Statistics Director

NIH/NIAID PI: A.S. De Groot 08/01/2008 – 07/31/2010  
1R43DK081261-01

*T1D Tolerance Induction with Natural Treg Epitopes*

The purpose of this project is to develop a therapeutic to treat and prevent Type 1 Diabetes.

Role: Bioinformatics Director

JDRF PI: A.S. De Groot 12/01/2008 – 11/31/2009  
Industry Grant

*Antigen-Specific Tolerance Induction (ASATI) for the Prevention and Treatment of T1D*

The purpose of this project is to develop a treatment for Type 1 Diabetes.

Role: Bioinformatics Director