# Victor D Martinez, Ph.D.

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## *Genetics Researcher | Computational Biologist | Lecturer*

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|---|---|
| **Genetics & Genomics** | **Communication Skills** |
| **Cancer Biology** | **Team Leadership** |
| **Bioinformatics** | **Project Management** |
| **Statistics** | **Organizational Skills** |
| **Teaching** | **Innovation Management** |

**Degrees:** PhD, Biomedical Sciences (Univ. of Chile, 2010) | MSc, Integrative Oncology (UBC, in progress) | BSc in Molecular Biotechnology (Univ. of Chile, 2002)

## TECHNOLOGIES

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|---|---|---|
| Next-Generation Sequencing (NGS) | Microarray | Partek Flow |
| Comparative Array Hybridization (CGH) | Cloud Computing | R Programming |
| Linux/Unix Platforms | GitHub | Galaxy |

## RESEARCH EMPLOYMENT HISTORY

**Research Associate,** BC Cancer Agency / PHSA, Vancouver (BC) **(2016-Present)**

- Conduct research to develop methodologies, instrumentation and procedures for bioinformatic analysis of >10,000 human genomes and transcriptomes.
- Plan and direct 10+ studies using NGS technologies to investigate (epi)genomic alterations in human disease, preventive methods, and treatments.
- Provide expertise in the design, management and evaluation of study protocols, sample selection, and analysis.
- Consult with senior researchers to recommend technology-based solutions and determine computational strategies.
- Communicate research findings to scientists, health practitioners, and the public (authored 15 publications and spoke at 10 national and international conferences).
- Supervise 12 students, technical and clerical personnel.

**Postdoctoral Fellow,** BC Cancer Agency / PHSA, Vancouver (BC) **(2011-2016)**

- Analyze large genomic and epigenomic datasets (>1,000 samples per cohort) for basic and clinical research purposes.
- Made significant discoveries contributing to the understanding of genetic events driving environmentally-induced cancer in humans.

- Managed multiple projects and led a team of 5 graduate/undergraduate students that published 20 articles in reputable journals.
- Participated in writing of 5 major research grants and decided on resource allocation strategies.
- Represented the BC Cancer Agency at several local and international conferences.
- Teach cancer genetics, epigenetics and bioinformatics to students, technicians and general public.

**Program Manager – Science & Business,** Plataforma360 Santiago (Chile) **(2010-2011)**

- Established my consultancy firm in partnership with a former Chilean Government officer.
- Analyze data gathered and develop solutions or alternative methods of proceeding for innovation and commercialization practices at Universities and Research Centres.
- Prepare manuals and train workers in use of new innovation practices.
- Closed a contract with the National Institute of Intellectual Property (Chile) to improve technology transfer practices in Chilean Universities.

**Graduate (PhD) Researcher,** University of Chile, Santiago (Chile) **(2004-2010)**

- Designed and performed the first whole-genome analysis of arsenic-induced genetic alterations in lung cancer, using an array-based CGH platform.
- Obtained support from the Canadian Government through the Emerging Leaders in the Americas Program, to establish a collaboration with the BC Cancer Research Centre.
- Significantly contributed to obtaining more than USD$1 million in funding from Chilean Economic Development Agency for genetics analysis on cancer patients.
- Manage laboratory teams and monitor the quality of a team's work.
- Teach undergraduate level courses.

**Program Manager - Science & Business,** Univ. Adolfo Ibanez, Santiago (Chile) **(2004-2005)**

- Managed a government-funded program ("*Innovation for the future*") (USD XXX allocated for UAI) intended to support scientist to protect their IP and commercialize science-based project results
- Scientific consultant for the University's business incubator (Octantis).

## SELECTED PUBLICATIONS (out of a total of 42. Full list in Addendum A)

Citation Metrics in Google Scholar

Cancer Biology and Clinical Applications:

- **Martinez VD**, *et. al.* Non-coding RNAs predict recurrence-free survival of patients with hypoxic tumours. *Scientific Reports* 2018; 8: 152.
- Drilon A, Somwar R, Mangatt BP, Edgren H, Desmeules P, Ruusulehto A, Smith RS, Delasos L, Vojnic M, Plodkowski AJ, Sabari J, Ng K, Montecalvo J, Chang J, Tai H, Lockwood WW, **Martinez VD**, Riely GJ, Rudin CM, Kris MG, Arcila ME, Matheny C, Benayed R, Rekhtman N, Ladanyi M, Ganji G. Response to ERBB3-Directed Targeted Therapy in NRG1-Rearranged Cancers. *Cancer Discovery* 2018; 8: 686.
- Minatel BC*, **Martinez VD***, *et. al.* Large-scale discovery of previously undetected microRNAs specific to human liver. *Human Genomics* 2018; 12: 16 (*Co-1st authors).

Genomics and Cancer Etiology:

- **Martinez VD**, Thu KL, Vucic EA, Hubaux R, Adonis M, Gil L, MacAulay C, Lam S, Lam WL. Whole-genome sequencing analysis identifies a distinctive mutational spectrum in an arsenic-related lung tumor. Journal of Thoracic Oncology 2013; 8: 1451-1455.
- **Martinez VD**, Vucic EA, Lam S, Lam WL. Emerging arsenic threat in Canada. *Science* 2013; 342: 559.
- **Martinez VD**, Vucic EA, Lam S, Lam WL. Arsenic and lung cancer in never-smokers: lessons from Chile. *Am J Respiratory and Critical Care Medicine* 2012; 185: 1131.

Genetics Mechanisms and Toxicology:

- **Martinez VD**, Buys TP, Adonis M, Benitez H, Gallegos I, Lam S, Lam WL, Gil L. Arsenic-related DNA copy-number alterations in lung squamous cell carcinomas. British Journal of Cancer 2010; 103: 1277-1283.
- Adonis M, **Martinez VD**, Marin P, Berrios D, Gil L. Smoking habit and genetic factors associated with lung cancer in a population highly exposed to arsenic. *Toxicology Letters* 2005; 159: 32.

## TEACHING EXPERINCE IN CANADA

**Invited Lecturer,** University of British Columbia, Vancouver (BC)

- ONCO548, Faculty of Medicine - Oncology (2017)
- MEDG421, Faculty of Medicine - Genetics and Cell biology of Cancer (2016)
- Occupational & Environmental Health Seminars, School of Population Health (2012)

**Invited Lecturer,** Simon Fraser University, Vancouver (BC)

- ONC548, School of Biomedical Physiology and Kinesiology - Oncology Concepts (2018)
- ENSC460, Engineering Science Program - Optical Instrumentation for Cancer Detection and Diagnosis (2016 and 2018)

## EDUCATION

Undergraduate & Graduate Degrees:

- **Doctor of Philosophy in Biomedical Sciences,** University of Chile (2010)
- **Master of Science in Interdisciplinary Oncology,** University of British Columbia (2018, estimated)
- **Bachelor of Science in Molecular Biotechnology,** University of Chile (2002)

Additional Training:

- **Silicon Valley Immersion Program,** University of San Francisco (2011)
- **Diploma in Innovation Management,** University of Leipzig (2007)

## ADDITIONAL EXPERIENCE

- **Committee Memberships**

  Member of the "Emerging Systems Toxicology for Assessment of Risk (eSTAR)" committee of the Health and Environmental Sciences Institute (HESI). HESI identify and help to resolve global health and environmental challenges through the engagement of scientists from academia, government, industry, clinical practice, research institutes and NGOs.

- **Invited Talks**

  I have been invited to present at ten national and international conferences. Additionally, nearly 50 of my abstracts have been accepted for presentation (Addendum A).

- **Teaching Experience Abroad**

  **Teaching Assistant,** University of Chile (Santiago, Chile)

  - Chemistry, Faculty of Medicine (2002-2003 and 2009-2010)
  - Genetics, Faculty of Medicine (2007)
  - Environmental Toxicology and Toxicogenomics, Faculty of Medicine (2004)

  **Invited Lecturer,** University of Santiago (Santiago, Chile)

  - Biotechnology Management MSc Program, Faculty of Engineering (2007-2011)

- **Selected Awards (Last 5 years)**
  - University of British Columbia, Faculty of Medicine Graduate Award (2017 | 2018)
  - University of British Columbia, International Tuition Award (2017)
  - The Canadian Institutes of Health Research – Travel Award (2016)

- American Association for Cancer Research – Scholar-in-training Award (2016)
- Terry Fox Research Institute - Travel Award (2015)
- Canadian Cancer Society Research Institute – Travel Award (2013)
- International Association for the Study of Lung Cancer - Young Investigator Award (2013)

- **Public Outreach / Volunteering**

**Editorial Board Member**

- Scientific Reports (Nature Publishing Group)
- Biomed Research International (Hindawi Publishing Group)

**Scientific Memberships**

- American Society of Human Genetics
- Canadian Society for Molecular Biosciences
- American Association for Cancer Research
- American Association for the Advancement of Science

**Community Outreach**

- Volunteer for “Let’s talk Science”