

Biographical Sketch

Nicholas James Provart, Ph.D.

A. PROFESSIONAL PREPARATION

Torrey Mesa Research Institute, San Diego	Staff Scientist, RNA Dynamics		2001-2002
PlantTec Biotechnologie GmbH	Staff Scientist, Biopolymers		1997-2000
Institut für Genbiologische Forschung	Postdoctoral Fellow		1996-1997
Freie Universität Berlin, Germany	Biology	Ph.D.	1993-1996
University of Toronto, Canada	Plant & Microbial Biology	M.Sc.	1991-1993
University of Toronto, Canada	Molecular Genetics/Biology	B.Sc.	1990

B. APPOINTMENTS

- 2002 – present Assistant Professor, Department of Cell & Systems Biology, University of Toronto.
- 2002 – present Director, Departmental Genome Canada Affymetrix Facility.
- 2005 – present Director, Collaborative Graduate Program in Genome Biology & Bioinformatics, School of Graduate Studies, University of Toronto, Canada.
- 2006 – present Faculty member, Center for the Analysis of Genome Evolution & Function, University of Toronto.

C. PUBLICATIONS

Five Publications most closely related to the proposed project

Dr. Provart has established himself as a significant figure in the areas of web-based tool development for exploring Arabidopsis and other species' microarray data, Arabidopsis microarray data analysis, plant systems biology and comparative genomics. Dr. Provart's laboratory runs the popular Bio-Array Resource for Arabidopsis Functional Genomics at <http://BAR.utoronto.ca>, which is used approximately 45,000 times a month by plant researchers worldwide. Several of the tools are described in the following papers. Past or present students or post-doctoral fellows under his supervision are indicated in **bold**.

1. Ehlting J, Sauveplane V, Olry A, Ginglinger J-F, Provart NJ, Werck-Reichhart D (2008). An extensive (co-)expression analysis tool for the cytochrome P450 superfamily in *Arabidopsis thaliana*. BMC Plant Biology 2008, 8:47.
2. Geisler-Lee J¹, O'Toole N¹, **Ammar R**¹, Provart NJ, Millar AH, Geisler M (2007). A Predicted Interactome for Arabidopsis. Plant Physiology 145:317-329 (¹co-first authors).
3. **Winter D**, **Vinegar B**, **Nahal H**, **Ammar R**, Wilson GV, Provart NJ (2007). An 'Electronic Fluorescent Pictograph' Browser for Exploring and Analyzing Large-Scale Biological Data Sets. PLoS ONE 2:e718.
4. **Toufighi K**, Brady S, **Austin R**, **Ly E**, Provart NJ (2005). The Bio-Array Resource: e-Northern, Expression Angling, and Promoter Analyses. Plant Journal 43(1):153-163.
5. Chen W, Provart N, Glazebrook J, Katagiri F, Chang H-S, Eulgem T, Mauch F, Luan S, Zou G, Whitham SA, Budworth PR, Tao Y, Xie Z, Chen X, Lam S, Kreps JA, Harper JF, Si-Ammour A, Mauch-Mani B, Heinlein M, Kobayashi K, Hohn T, Dangl JL, Wang X and Zhu T (2002). Expression Profile Matrix of Arabidopsis Transcription Factor Genes implies Their Putative Functions in Response to Environmental Stresses. Plant Cell 14(3):559-74.

Five other significant publications

1. **Bassel GW**¹, Fung P¹, Chow TF, **Foong JA**, **Provart NJ**², Cutler SR² (2008). Elucidating the germination transcriptional program using small molecules. *Plant Physiology* 147: 143-155 (¹ co-first authors, ² co-corresponding authors).
2. **Austin R**, **Provart NJ**^{*}, Cutler S (2007). Improving Carboxy-terminal targeting signal prediction using comparative genomics and tripeptide statistical over-representation across protein families. *BMC Genomics* 2007, 8 : 191 (* corresponding author).
3. Lan H¹, **Carson R**¹, **Provart NJ**, Bonner AJ (2007). Combining classifiers to predict gene function in *Arabidopsis thaliana* using large-scale gene expression measurements. *BMC Bioinformatics* 8:358.
4. **Provart NJ**, McCourt P (2004). Systems approaches to understanding cell signaling and gene regulation. *Curr. Opin. Plant Biol.* 7(5):605-9.
5. **Provart NJ**¹, Gil P¹, Chen W, Han B, Chang S, Wang X, Zhu T (2003). Gene Expression Phenotypes of Arabidopsis Associated with Sensitivity to Low Temperatures. *Plant Physiology* 132:893-906.

D. SYNERGISTIC ACTIVITIES

1. Co-developed, together with David Guttman in the Department of Cell & Systems Biology, a **Computational Genomics and Bioinformatics** fourth year course with a hands-on tutorial, where programming and the use of various computer applications is introduced. Now in its 7th year.
2. Developed and mounted a 3rd year bioinformatics lab-based course, **Bioinformatic Methods**, in 2008. The course had 88 students register for 2009.
3. Developed a **2nd year bioinformatics laboratory** for BIO250, the introductory Cell & Molecular Biology course that 1500 undergraduates take. This lab was presented at ABLE, the Association for Biology Laboratory Education, conference in 2005, and was published as part of an ABLE laboratory manual.
4. Developed the curriculum for an **Undergraduate Specialist Program in Bioinformatics and Computational Biology** (BCB Specialist) at the University of Toronto, together with colleagues from Biochemistry and Computer Science.
5. Director of the **Collaborative Graduate Program in Genome Biology and Bioinformatics**. 18 Ph.D. students are currently in the GBB program, which involves rotations, internships, required courses, a seminar series, and an annual retreat.
6. Academic editor for **PLoS ONE**.
7. Supervision of high-school students for the **Aventis Bio-talent Challenge**. In 2008, a group of students (Josh Alman and Norman Yau) supervised by Dr. Provart placed 1st in the regional competition, 2nd in the Canada-wide competition, and competed in the international BioGENEius competition in California.

E. COLLABORATORS AND OTHER AFFILIATIONS

i. Collaborators and Co-authors in the last 48 months

Matt Geisler (Southern Illinois U.), Michael Holdsworth (U. Nottingham, UK), Henk Hillhorst (Wageningen, Holland), Sean Cutler (UC Riverside), Siobhan Brady (UC Davis), Peter McCourt (U. Toronto, Canada), Quaid Morris (Centre for Cellular & Biomolecular Research, Canada), Juergen Ehltling (U. Victoria, Canada), Bjoern Usadel (Max Planck Inst. for Molecular Plant Physiology, Germany), Malcolm Campbell (U. Toronto, Canada), Anthony Bonner (U. Toronto, Canada).

ii., iii. Graduate and Postdoctoral Supervision, and Graduate Committee Membership

I am currently supervising 2 M.Sc. students, a post-doctoral fellow, and two laboratory technicians. I have graduated 4 M.Sc. and one Ph.D. student. In addition, I am on 18 graduate supervisory committees, and have served on an additional 9 others since starting at the University of Toronto in 2002.