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Genome Bioinformatics Laboratory
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Education

University of California at Berkeley

Ph.D, Molecular and Cell Biology (05/22/04)

Thesis Committee: John Ngai, Dan Rokhsar, Ehud Isacoff, Terry Speed

Dissertation Title: Molecular Diversity of Odorant Receptors in Zebrafish

Stanford University

B.S. with Departmental Honors, Biological Sciences (06/96)

Publications

TS Alioto, J Ngai: **The odorant receptor repertoire of teleost fish.** *BMC Genomics* 2005, **6**:173.

M Takehashi, T Alioto, T Stedeford, AS Persad, M Banasik, E Masliah, S Tanaka, K Ueda: **Septin 3 gene polymorphism in Alzheimer's disease.** *Gene Expr* 2004, **11**:263-70.

K Guillemin, T Williams, MA Krasnow: **A nuclear lamin is required for cytoplasmic organization and egg polarity in Drosophila.** *Nat Cell Biol* 2001, **3**:848-51.

Competitive Grants

National Institutes of Health Genomics Training Grant (06/03 – 06/04)

Research

Genome Bioinformatics Lab, Center for Genomic Regulation (CRG), Institut Municipal d'Investigació Mèdica (IMIM), Universitat Pompeu Fabra (UPF) (11/04 – present)

Postdoctoral Researcher [Principle Investigator: Roderic Guigó]

- Computational prediction of splicing.
- Evolution of splice sites and splice patterns.
- Improvement of gene prediction software to handle exceptional cases.

UC Berkeley, Department of Molecular and Cell Biology (08/98 – 10/04)

Graduate Student/Postdoctoral Researcher

Olfaction [*Advisor: John Ngai*]

- Identified the complete repertoire of odorant receptors in zebrafish.
- Verified receptor gene predictions through RT-PCR and *in situ* hybridizations in zebrafish.
- Developed a suite of PERL scripts for the management of custom sequence databases, gene prediction automation, visualization of gene prediction results, and primer design.

Functional Genomics [*Advisors: Josh Kaplan (Harvard University) and John Ngai*]

- Studied the extent and efficiency of trans-splicing in *C. elegans* and utilized this feature to amplify cell-type-specific mRNA for use with *C. elegans* DNA

microarrays.

- Organized and managed the production of whole genome DNA microarrays.
- Employed functional genomic methods to identify genes required for the proper specification of interneuron-motorneuron synapses in *C. elegans*.
- Led a team to design a Laboratory Information Management System (LIMS) in Oracle for DNA microarray production and experimental data storage and retrieval. Developed a JDBC compliant Java-based graphical user interface for the LIMS.

Kyoto University, Institute for Chemical Research (09/96 – 06/98)

Research Associate [Advisors: Kunihiro Ueda, Seigo Tanaka]

- Completed case control study (Alzheimer's Disease, Lewy Body Variant of AD, Parkinson's Disease, control) of microsatellite polymorphisms in the vicinity of the CYP2D locus on human Chromosome 22.
- Identified candidate NACP/ α -synuclein-interacting proteins.

Kyoto Sangyo University, Faculty of Physics (06/96 – 09/96)

Research Associate [Advisor: Chikafusa Bessho]

- Examined the long-term facilitation and habituation models of learning and memory in *Aplysia californica*.
- Cloned and sequenced a putative adenylate cyclase-coupled serotonin receptor gene from *Aplysia californica*.

Stanford University, Department of Biochemistry (04/95 – 04/96)

Independent Research / Undergraduate Honors Thesis [Advisor: Mark Krasnow]

- Cloned and sequenced the *Drosophila* gene *misguided*, identifying it as a nuclear lamin.
- Determined that mutations in *misguided* disrupt cell polarity and the morphology of terminal tracheal branches.

Stanford University, Protein and Nucleic Acid Analysis Facility (06/94 – 04/96)

Technician [Supervisor: Alan Smith]

- Synthesized peptides (Fmoc chemistry).
- Microsequenced N-terminal peptides (Edman degradation). Assembled microsequences and performed homology searches.

Presentations **The Biology of Genomes, Cold Spring Harbor Labs** poster (05/05)

“Prediction of Genes with U12-Dependent Introns in the Human Genome.”

Helen Wills Neuroscience Institute Conference invited talk (11/03)

“Zebrafish family C odorant receptors: from sequence to expression to function.”

European Conference on Computational Biology poster (09/03)

“Identification and Characterization of GPCR Family C Odorant Receptors in Zebrafish.”

Kyoto University Bioinformatics Center seminar (06/03)

“Identification and Characterization of Zebrafish Family C Odorant Receptors.”

UC Berkeley Neuroscience Conference poster (11/02)

“Mining the Zebrafish Genome for Amino Acid Odorant Receptor Genes.”

UC Berkeley Cell and Developmental Biology Conference poster (11/00)
“Cell type specific gene expression profiles in *C. elegans* using splice leader mRNA tagging.”

Teaching

Universitat Pompeu Fabra

MSc. on Bioinformatics for Health Sciences (11/05)

Instructor

- Developed and taught a module covering the topic of orthology.

Bioinformatics (Health and Life Sciences program) (03/05)

Supervisor

- Supervised an undergraduate bioinformatics research project designed to teach basic Perl scripting and presentation of search results.

UC Berkeley, Department of Molecular and Cell Biology

Graduate Student Instructor

- Reviewed lecture curriculum with undergraduate students, led weekly discussion sessions and developed / administered exams.

Brain, Mind and Behavior [*Professor: David Presti*] (01/02 – 05/02)

Neurons and Networks [*Professor: Frank Werblin*] (08/01 – 12/01)

- Lectured on the olfactory system

Skills

Programming/Scripting Languages: Perl, C, Java, SQL, PHP, HTML

Operating Systems: Linux, MacOS 9/X, Windows NT/XP

Japanese (Certificate of Japanese Proficiency Test 3rd Level)

Spanish (Intermediate level speaking, reading and writing)

Catalan (Elementary level speaking, reading and writing: UPF Level 1A)

Other

2nd IEEE Computer Society Bioinformatics Conference, Stanford University (10/03)

- Participated in “Computing Non-coding cis-regulatory DNAs” and “Comparative Genomics” tutorials.