

# JOHN A. MCNEIL

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## Synopsis

- Senior Technology and Business Officer with strong creative, business and marketing skills.
- Strong leadership capabilities which result in breakthrough solutions and products.
- Excellent multi-disciplinary technology development and integration skills.
- Driven to solve challenging technical and business problems in emerging science and technology.
- BS Physics, Harvey Mudd College.

## Employment History

### Present Position

John McNeil & Company, Inc., La Jolla, CA (2005-Present)

*President*

- Designed, developed, and launched LabSynch ([www.labsynch.com](http://www.labsynch.com)) a collaborative web application (web 2.0/ Ajax) for experiment recording, analysis, and discussion.
- Helped a biotechnology company isolate and manage I.P. sensitive collaboration data from its partnership with a large pharmaceutical company by developing strategy and selecting software tools.
- Helped a biotechnology company develop its one- and three-year IT plans, including a unified knowledge management strategy.
- Customized LabSynch and deployed it to a biotechnology company where it accelerates their drug discovery process and provides process traceability and QC for lead compounds. Customer's internal study shows LabSynch has provided time savings sufficient to offset the entire cost of deployment.
- Served as interim CIO of a biotech company. Hired to rebuild research informatics group; integrate IT and informatics; improve internal customer support; and improve data analysis, mining, and presentation systems.
- Designed infrastructure and research software architecture for start-up biotech.
- Programmed hands-off dose-response curve curation and fit software capable of automatically fitting and classifying 10,000 curves in a batch. Generates reports allowing scientist to review 10,000 results in 10 minutes.
- Transferred custom developed uHTS custom screening system from one research company to another; removed specific research-related IP; upgraded code; installed and integrated software; and provided ongoing support and customization.
- Designed medicinal chemistry workflow software for a CRO that provides compound registration, batch management, and intercontinental reagent supply flow.
- Deployed LabSynch as primary collaboration and joint data mining tool for a 13 laboratory NIH research project.
- Serve as strategic IT/informatics advisor for four mid-size biotechnology companies.

### Previous Positions

Ibis (Division of Isis Pharmaceuticals), Carlsbad, CA (2004-2005)

*Vice President, Ibis Product Development*

- Helped design and create TIGER, the Universal Pathogen Sensor, a revolutionary system that can identify any infectious agent whether known or new to science ([www.ibistiger.com](http://www.ibistiger.com)).
- Established collaboration leading to initial DARPA funding for TIGER.
- Created or identified business opportunities, and organized proposal efforts, leading to over \$40M in revenue from government agencies including DARPA, CDC, NIAID, FBI, and DHS.

- Developed TIGER business plan, in collaboration with senior TIGER team, leading to board approval, Isis investment, and ultimately the sale of Ibis to Abbot.
- Developed phase I engineering and design concept for third-generation TIGER instrument that provides a product roadmap to commercialize TIGER in 15 months.
- Designed the Microbial Rosetta Stone Database for the FBI and DHS to support their microbial forensics mission. The database is unique in that it gracefully stores conflicting scientific data (for example, taxonomic information) in a manner that minimizes confusion and maximizes delivery of relevant knowledge.
- Participated in, and influenced, the development of Isis corporate strategy as a member of the executive team.

Isis Pharmaceuticals, Inc., Carlsbad, CA (2000-2004)

*Vice President, Informatics*

- Hired managers and rebuilt informatics team to support all computer systems for a 500-person company, enabling corporate objectives across the company and enhancing productivity of Isis employees.
- Built service team and trained them in attitude, problem solving, and flexibility, so they could support diverse computing platforms and support rapid change. This gave research, development, manufacturing, accounting, and finance the flexibility to change their processes to improve efficiency, adapt to new business needs, and pursue new research.
- Learned process and regulations for clinical data management, then rapidly applied this knowledge to develop and implement a new data management system after the failure of a previous development effort.
- Mentored two PhD Directors, each responsible for supporting independent biological research groups. Their teams provided excellent tools, gracefully supported change, and contributed to the basic science.
- Participated in, and influenced, the development of Isis corporate strategy as a member of the executive team.

Isis Pharmaceuticals, Inc., Carlsbad, CA (1997-2000)

*Director, Bioinformatics*

- Founded Isis bioinformatics department. Developed core databases and bioinformatics tools to enable Isis' antisense discovery pipeline to increase throughput 100x.
- Created universal object-relational model for DNA-like antisense molecules enabling storage and retrieval of over 300,000 molecules incorporating thousands of chemical modifications.
- Developed computational biology infrastructure and algorithms to predict RNA structures for small-molecule antibiotic and antiviral drug discovery.
- Selected and managed deployment of cheminformatics and LIMS software enabling small-molecule screening to launch a novel mass spectrometer-based high-throughput screening process.

Science Applications International Corporation (SAIC), San Diego, CA (1994-1997)

*Laboratory Sensors and Automation Division Manager*

- Developed combinatorial chemistry synthesis robot with three independent tool-changing platen-motor heads and a variety of custom-designed pipetting and plate manipulation tools. System allowed client to rapidly set up and wash hundreds of concurrent solid-phase reactions from a pool of over 100 building-block reagents. This put them at the forefront of the emerging chemical diversity market.
- Invented and built imaging fluorimeter which enabled biotechnology client to measure calcium flux in living cells simultaneously in 384 wells of microtiter plate, where they previously measured one well at a time.
- Designed, built, and programmed robotic high-throughput screening system that let the imaging fluorimeter operate 24 hours per day. This required creation of LIMS, scheduling, and analysis software, none of which were commercially available at the time. Two systems were deployed, one of which functioned continuously for over seven years and screened over 2 million compounds.

- Hired and managed instrument sales team, while directly interacting with most customers, yielding \$8 million in robot orders.

Science Applications International Corporation (SAIC), San Diego, CA (1989-1994)

*Physicist*

- Developed signal processing algorithms and systems-engineering models to analyze various sensor systems and data, enabling government customers to make program funding decisions based on the physics, not marketing hype.
- Built prototype and software for an imaging laser radar capable of locating 1/2" glass retro-reflector at 15km with 10m precision.

Cinematronics, El Cajon, CA (1982-1985)

*Customer Service Manager*

- Managed customer support department during the launch of the video game industry's first laser-video disk based game, Dragon's Lair. Kept systems running by quickly building and training opto-electronic servo repair group and training distributors. Speed was critical because video game popularity only lasts a few months.
- Developed optical jigs and techniques to repair first generation laser disk players, which used HeNe tube lasers and five analog servo loops. This allowed our team to rapidly repair and return players experiencing > 50% failure-rates in the field, without returning them to Pioneer, who did not have the support facilities to meet demand, or replacement units.

## Publications

- Hari K.L. et al. The Microbial Rosetta Stone: a database system for tracking infectious microorganisms. *Int J Legal Med.* 2009 Jan;123(1):65-9. Epub 2008 Jul 8.
- Ecker, D.J. et al. Rapid identification and strain-typing of respiratory pathogens for epidemic surveillance. in press, *PNAS* 2005 (2005).
- Sampath, R. et al. Rapid identification of emerging pathogens: Coronavirus. *Emerging Infectious Diseases* 11, 373-379 (2005)
- Hofstadler, S. A. et al. TIGER: the universal biosensor. *International Journal of Mass Spectrometry* 242, 23-41 (2005).
- Ecker, D.J. et al. The Microbial Rosetta Stone Database: A compilation of global and emerging infectious microorganisms and bioterrorist threat agents. *BMC Microbiology* 2005, 5:19.
- Ecker, D.J. et al. The Microbial Rosetta Stone Database: A common structure for microbial biosecurity threat agents. *Journal of Forensic Science* 2005, in press
- Fogel, G.B. et al. Discovery of RNA structural elements using evolutionary computation. *Nucleic Acids Res.*, 2002. 30(23):5310-7.
- Lesnik, E.A. et al. Prediction of rho-independent transcriptional terminators in *Escherichia coli*. *Nucleic Acids Res.*, 2001. 29(17): p. 3583-94.

## Patents

- 6,429,016 System and method for sample positioning in a robotic system
- 6,221,587 Identification of molecular interaction sites in RNA for novel drug discovery
- 6,746,864 Automated system for simultaneously performing a plurality of signal-based assays
- 6,800,452 Automated methods for simultaneously performing a plurality of signal-based assays
- 6,911,181 Self-dispensing storage device
- 7,108,974 Method for rapid detection and identification of bioagents
- 6,969,763 Molecular interaction sites of interleukin-2 RNA and methods of modulating the same
- 7,217,510 Methods for providing bacterial bioagent characterizing information
- 7,226,739 Methods for rapid detection and identification of bioagents in epidemiological and forensic investigations

- 7,255,992 Methods for rapid detection and identification of bioagents for environmental and product testing
- 7,321,828 System of components for preparing oligonucleotides
- 7,427,380 Automated system and method for simultaneously performing a plurality of signal-based assays
- WO 1999/053101 Identification of genetic targets for modulation by oligonucleotides and generation of oligonucleotides for gene modulation
- WO 1999/058947 Modulation of molecular interaction sites on rna and other biomolecules
- WO 2002/093409 Multi-paradigm knowledge-bases
- WO 2003/001976 A secondary structure defining database and methods for determining identity and geo-graphic origin of an unknown bioagent thereby
- WO 2003/091268 Molecular interaction sites of vimentin rna and methods of modulating the same
- WO 2003/100035 Method for rapid detection and identification of viral bioagents
- WO 2004/052175 Methods for rapid identification of pathogens in humans and animals
- WO 2004/053141 Methods for rapid forensic analysis of mitochondrial dna and characterization of mito-chondrial dna heteroplasmy
- WO 2004/060278 Methods for rapid identification of pathogens in humans and animals
- WO 2004/093644 Methods and apparatus for genetic evaluation
- WO 2005/009202 Automatic identification of bioagents
- WO 2005/036369 Database for microbial investigations
- WO 2005/086634 A secondary structure defining database and methods for determining identity and geographic origin of an unknown bioagent thereby
- WO 2005/089128 Rapid identification of microbial agents

### **Scientific Advisory Board Memberships**

- NIH NIAID Bioinformatics Integration Support Contract (BISC) Expert Panel member
- NIH Immune Epitope Database (IEDB) Working Group member