

# FRED S. AZAR

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## EDUCATION

### THE WHARTON SCHOOL, UNIVERSITY OF PENNSYLVANIA

Philadelphia, PA

#### *Master of Business Administration (M.B.A.)*

2007-2009

- Finalist at the Wharton NY Business Plan Competition (New York City, 2010): Presented to a panel of VC's, angels and entrepreneurs. Plan was submitted to the Wharton Angel Network.

### UNIVERSITY OF PENNSYLVANIA

Philadelphia, PA

#### *Ph.D. in BioEngineering*

1995-2001

- Dean's Fellowship (U. of Pennsylvania), and FCAR Fellowship for Ph.D. research (Government of Quebec, Canada)
- Towne Fellow Award in Technology and Management – U. of Pennsylvania
- First Prize at the Graduate Student Paper Competition - IEEE Annual Bioengineering Conference

### ECOLE CENTRALE PARIS

Paris, France

#### *Master of Science in BioEngineering*

1993-1994

- French Engineering Grande Ecole – Member of the TIME Network (Top Industrial Managers for Europe)
- Master Thesis received top grade in class, "Mention Excellent"

### McGILL UNIVERSITY

Montreal, QC

#### *Bachelor of Electrical Engineering*

1989-1993

- Honors Program; Faculty Scholar; top 10% of class; elected IEEE Chapter Vice-President
- Eastern Canada Council Life Member Award – Institute of Electrical and Electronics Engineers (IEEE)
- Award Scholarship from the National Sciences & Engineering Research Council of Canada

## EXPERIENCE

### BECTON DICKINSON & CO.

Franklin Lakes, NJ

#### **Manager, Strategic Innovation / Business Development**

2009-2010

- Evaluated startup companies which could lead to internal development or acquisition of a new technology,
- Pursued pre-concept and concept development,
- Developed strategies for entry into new markets,
- Uncovered clinical unmet needs and identified new opportunities.

### SIEMENS CORPORATE RESEARCH

Princeton, NJ

#### **Project Manager / External Projects Lead**

2002-2009

- Awarded in '09 a \$4.5 Million NIH-funded grant to develop new device which will combine and correlate clinical in-vivo & in-vitro information to validate new biomarkers for prostate cancer detection; project ranked in top 3% of all NIH applications.
- Managed team in development of clinical software platform and interface for novel intraoperative imaging system, which recently advanced to human clinical trials. System enables surgeons to see human disease intraoperatively (under image guidance), perform sentinel lymph node mapping, resect tumors, and avoid critical structures. Device was featured in Siemens' strategic publication "Pictures of the Future", with broad internal and external distribution.
- Led multi-disciplinary team in multi-institutional NIH-funded \$18 Million project to bring to market most promising optical imaging technologies for tracking and predicting cancer. Developed first software prototype platform in the world capable of jointly analyzing multimodal optical imaging data with X-Ray mammography and MRIs of the Breast.
- Developed functional design specifications and testing protocols for first commercial 3D image-guided technology in the world for catheter ablation procedures in treating complex heart arrhythmias.

## EXPERIENCE (Cont'd)

### SARNOFF CORPORATION

Princeton, NJ

#### Consultant

2002

- Helped initiate two clinical studies with Massachusetts General Hospital to combine Sarnoff's unique image processing capabilities with Tomosynthesis imaging device for assessing value of breast cancer Tomosynthesis imaging.
- Formulated research and business strategy to increase share in Medical Devices market. Initiative contributed to development of an ophthalmic imagery system, using Sarnoff core vision technology, to improve detection of eye disease onset.

### UNIVERSITY OF PENNSYLVANIA – Depts. of Radiology & BioEngineering

Philadelphia, PA

#### Researcher / Ph.D. Candidate

1995-2001

- Developed first 3D virtual deformable model of the human breast built from MRI data; may enable physicians to perform biopsies of cancerous tissue with increased precision and confidence, in 30 minutes or less.
- Managed five-year project with team of engineers, computer scientists, radiologists, and a surgeon.

### MONTREAL NEUROLOGICAL INSTITUTE

Montreal, QC

#### Scientist

1994-1995

- Implemented and clinically tested software system to improve quality of 3D MR brain images.
- Conducted work in collaboration with AutoImmune, Inc. to test novel drug against Multiple Sclerosis; quality of results led to signing of multi-million dollar contract with major corporation for drug efficacy testing.

## OTHER EXPERIENCE

- **Scientific Advisory Board Member** – Tufts University, Dept. of Bioengineering (2010)
- **Edited and co-authored new book** entitled "Translational Multimodality Optical Imaging": First book covering technical, clinical & translational development of multimodal optical imaging (Oct. 2008, Artech House publishers).
- **Initiated and chaired five years in a row the first International Conference** dedicated to optical and multimodal biomedical imaging, at Photonics West, North America's largest commercial exhibition for biomedical optics and imaging technologies (>1000 international exhibitors). The Book Proceedings are sold on Amazon worldwide sites.
- **Nominated Chairman** of the NCI's (National Cancer Institute) Industry Working Group in the Multi-institutional Network for Translational Research in Optical Imaging (NTROI, 2006-2008).
- **Nominated Senior Member** of IEEE (Institute for Electrical & Electronics Engineers, 2010) and SPIE (International Society for Optics and Photonics, 2010)
- **Filed 19+ published patents, 45+ publications**, conferences & invited talks; reviewer & program committee member for several leading medical & engineering publications, and international symposia.

## ADDITIONAL INFORMATION

- **Languages:** fluent in French, intermediate skills in German and Spanish.
- **Residence and short stays:** U.S.A, Canada, France, United Kingdom, Germany, Spain, Switzerland, Italy, Greece, Portugal, Russia.
- **Professional societies:** Member, The Society for Molecular Imaging (SMI); Associate Member, American Society for Therapeutic Radiology and Oncology (ASTRO); Senior Member, International Society for Optics and Photonics (SPIE); Senior Member, Institute of Electrical and Electronics Engineers (IEEE).
- **Sports & Activities:** Ocean Diver, 2<sup>nd</sup> degree black belt in TaeKwonDo; Photography (6 exhibits, Philadelphia, Paris & Montreal).