



ACS Webinars™

We will start momentarily at 2pm ET



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Upcoming ACS Webinars™

Register for a great lineup of ACS Webinars™ in June and July!

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June 24 - "Exit Strategies – A Measure of Success for Chemical Entrepreneurs and Small Business" with Kenneth Polk, Director, ACS TechCatalyst.



July 1 - "From Laboratory to Licensing: Protecting Your Intellectual Property Along the Way" with Tom Steinberg, Patent Attorney, Roberts, Mlotkowski, Safran & Cole.



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Got Questions?

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ACS WEBINARS™ *A Life of Innovation – Finding Your Passion*



Speaker: David Walt
Tufts University



Moderator: Ben Yerxa
Inspire Pharmaceuticals

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A Life of Innovation: Finding Your Passion
ACS Webinar

David R. Walt
Tufts University



Outline

Academic Discoveries

Company Formation

Lessons



Getting Started

Traditional academic training
as a synthetic organic chemist

Assistant Professor position



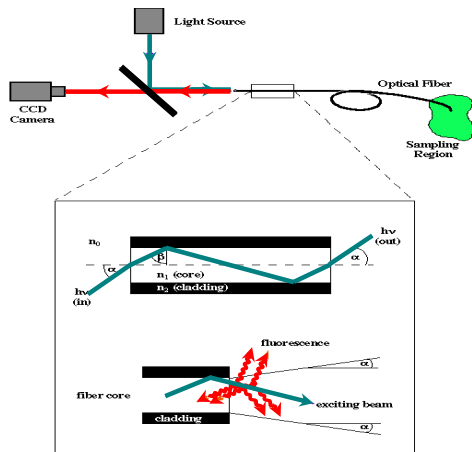
Opportunity Knocks

Workshop

Consulting engagement



Optical Fibers

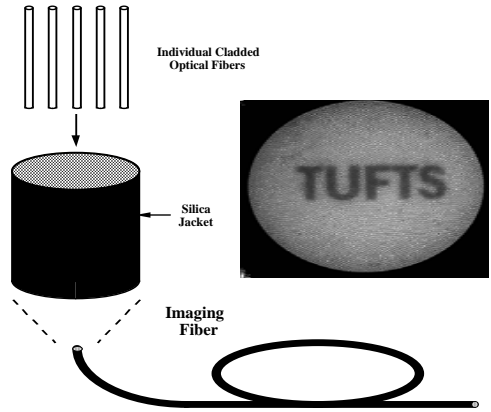


Serendipity 1

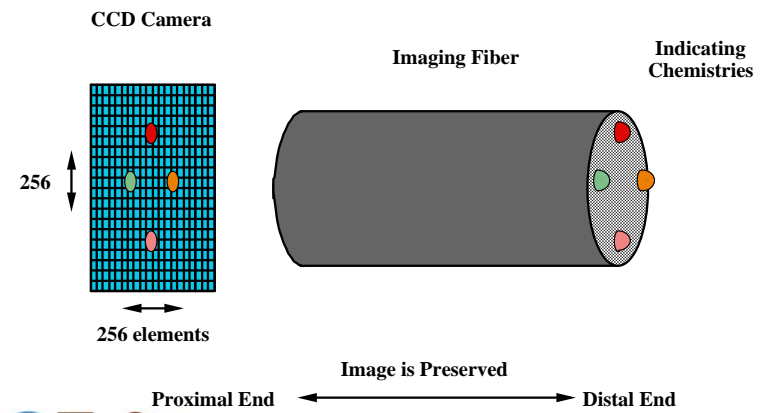
CCD Cameras

Optical Fiber Innovator

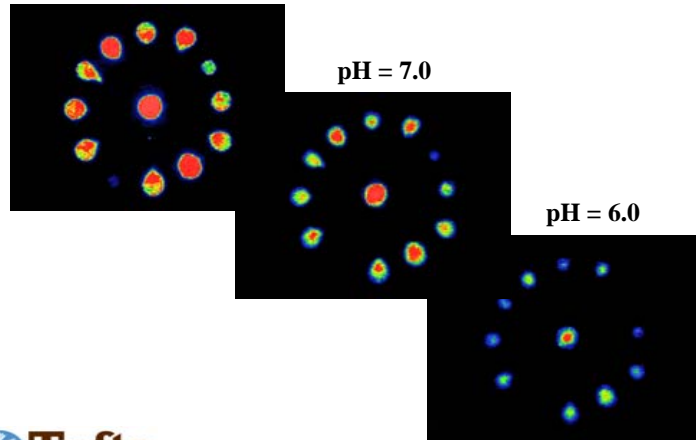
Imaging Fibers



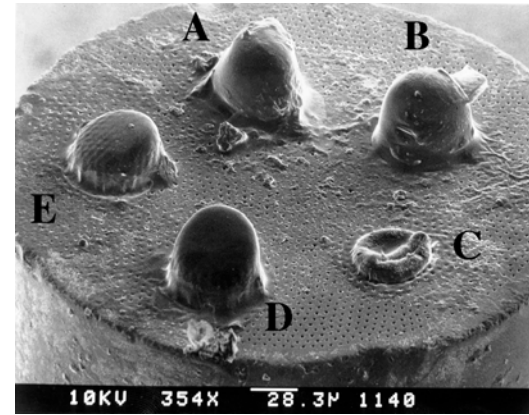
Imaging Sensor: Principle



pH Array on a 500 μ m imaging bundle
pH = 8.0



S.M. Barnard and D.R. Walt, *Nature*, 1991, 353: 338-40

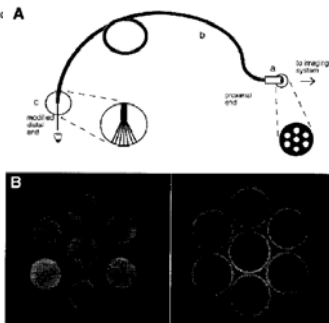


A fiber-optic DNA biosensor microarray for the analysis of gene expression

Jane A. Ferguson, T. Christian Boles¹, Christopher P. Adams¹, and David R. Walt^{2*}

¹The Max Foshler Laboratory for Organic Chemistry, Department of Chemistry, Tufts University, Medford, MA 02155.
²Mosaic Technologies, 800 Huntington Ave., Boston, MA 02115. *Corresponding author (e-mail: dwalt@psl.tufts.edu).

Received 13 August 1996; accepted



NATURE BIOTECHNOLOGY VOLUME 14 DECEMBER 1996



The Early Years

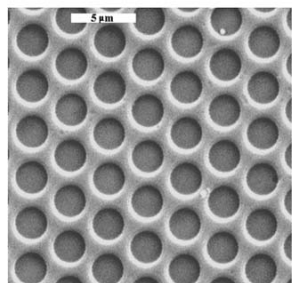
The Epiphany

Serendipity

Tufts University

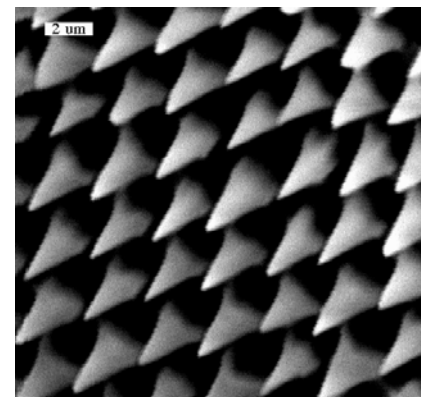


SEM of a Chemically-Etched Imaging Fiber



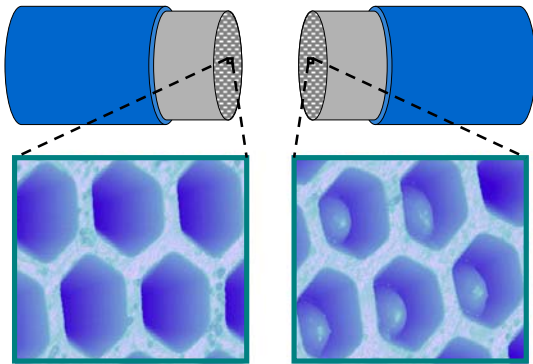
Pantano, P.; Walt, D.R. *Chem. Mater.* **1996**, 8, 2832-2835

SEM of a Chemically-Etched Imaging Fiber



Pantano, P.; Walt, D.R. *Rev. Sci. Instrum.*, **1997**, 68, 1357-1359

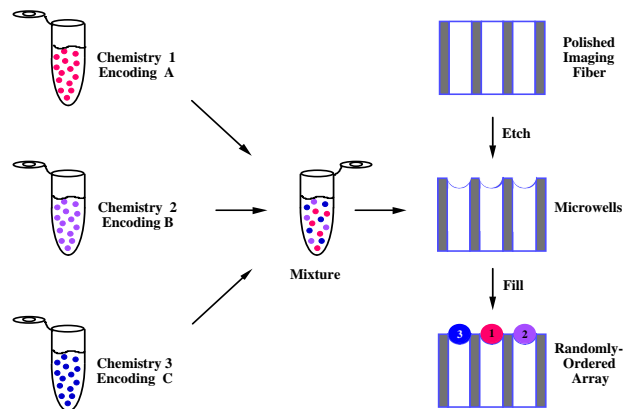
Loading Beads in Wells



The Early Years

A need led to inspiration and invention

Random Arrays—A Revolutionary Concept



Michael, K. L.; Taylor, L. C.; Schultz, S. L.; Walt, D. R. *Anal. Chem.* 1998.

The Early Years

Tufts University
10 Patents

IP Office
“The Introduction”



The Early Years

Venture Capital Firms



The Early Years

People

Location

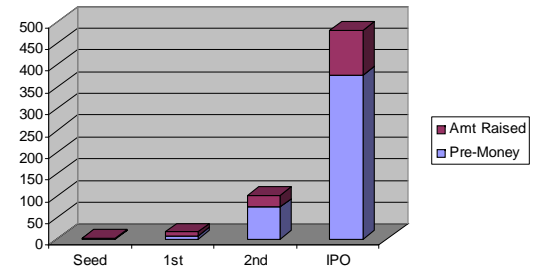


Oligonucleotides



Financial Resources

Raised \$140 Million
Total in Seed, 1st
Round, 2nd Round and
IPO



The Public Years

\$0

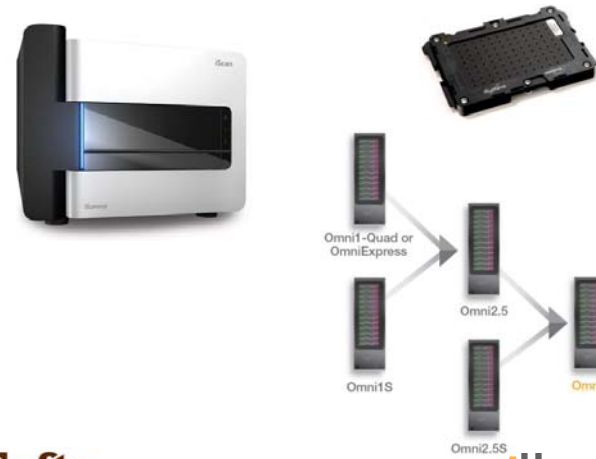
\$1.5B

\$100M

Low correlation to anything



Illumina Bead Arrays



Sequencing Evolution

Then



- ▶ 74 ABI 3730xl CE Sequencers + 10 FTEs
- ▶ 15-40 runs per day
- ▶ 1-2 Mb per instrument per day - 120 Mb total capacity per day

Now



- ▶ HiSeq 2000
- ▶ 200 Gb per instrument per run



A Global Organization



Corporate Summary

- Founded: May 1998
- IPO: July 2000
- Headquarters: San Diego, CA
- Employees: >2000
- Market Cap \$5.5 B

www.illumina.com



Quanterix



Quanterix



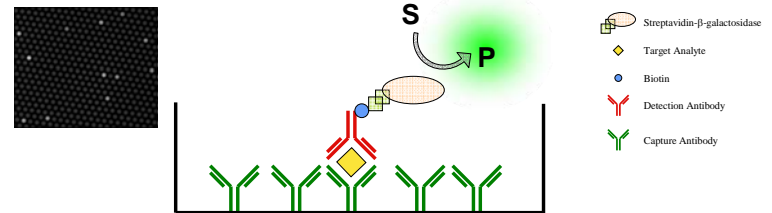
Quanterix

Founded 2007

\$15M Series A



Single Molecule Protein Analysis



Fiber surface of "ON" well (<10% of wells with analyte)



Fiber surface of "OFF" well (>90% of wells with no analyte)



Li Z, Hayman RB, and Walt DR. J. Am. Chem. Soc. 2008. 130: 12622-63
Rissin DM, Gorris HH, and Walt DR. J. Am. Chem. Soc. 2008. 130: 5349-53
Rissin DM and Walt DR. J. Am. Chem. Soc. 2006. 128:6286-87
Rissin DM and Walt DR. Nano Lett. 2006. 6: 520-23

SiMoA Diagnostic Platform: *Nature Biotechnology* June 2010



35



Corporate Information

Cambridge, MA 02139
11,000 sq. ft. laboratory/office space
20 employees



www.Quanterix.com



010

General Lessons

- Do it when ready
- Be prepared to work REALLY hard
- Surround yourself with outstanding people—don't compromise
- Don't start for ego, employees lives involved
- Decisions must be based on what is best for the business
- Don't persist in defending your technology as advances/changes occur
- Look for investors who bring added value \$+
- Product is a *system*



General Lessons

Serendipity—be prepared



Lessons for Academics

- Must be willing to give up some research funding and opportunities
- Don't start for ego, employees lives involved
- If successful, you will not be recognized
- If successful, your lab benefits—\$, widgets



Education

- HHMI
- Big Bang to Humankind
- Engaging Young Scientists in Research
- Mentoring
- High Schools





Q&A SESSION

A Life of Innovation – Finding Your Passion



Speaker: David Walt
Tufts University



Moderator: Ben Yerxa
Inspire Pharmaceuticals

Please submit your questions for the speaker via the
Questions Panel in GoToWebinar

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