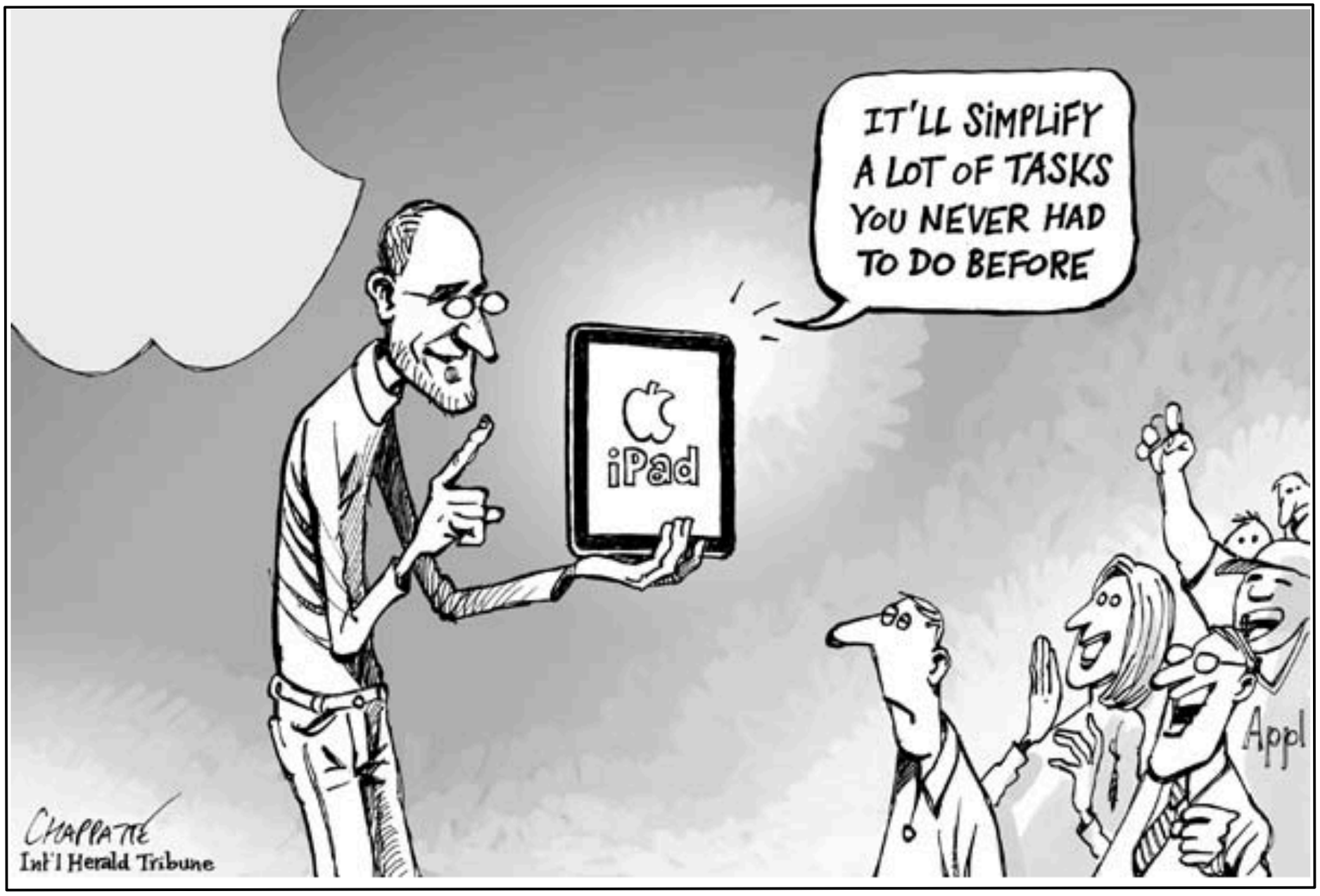
Riding the Mobile Wave

Dr. Steven Muskal

Chief Executive Officer

Eidogen-Sertanty, Inc

smuskal@eidogen-sertanty.com

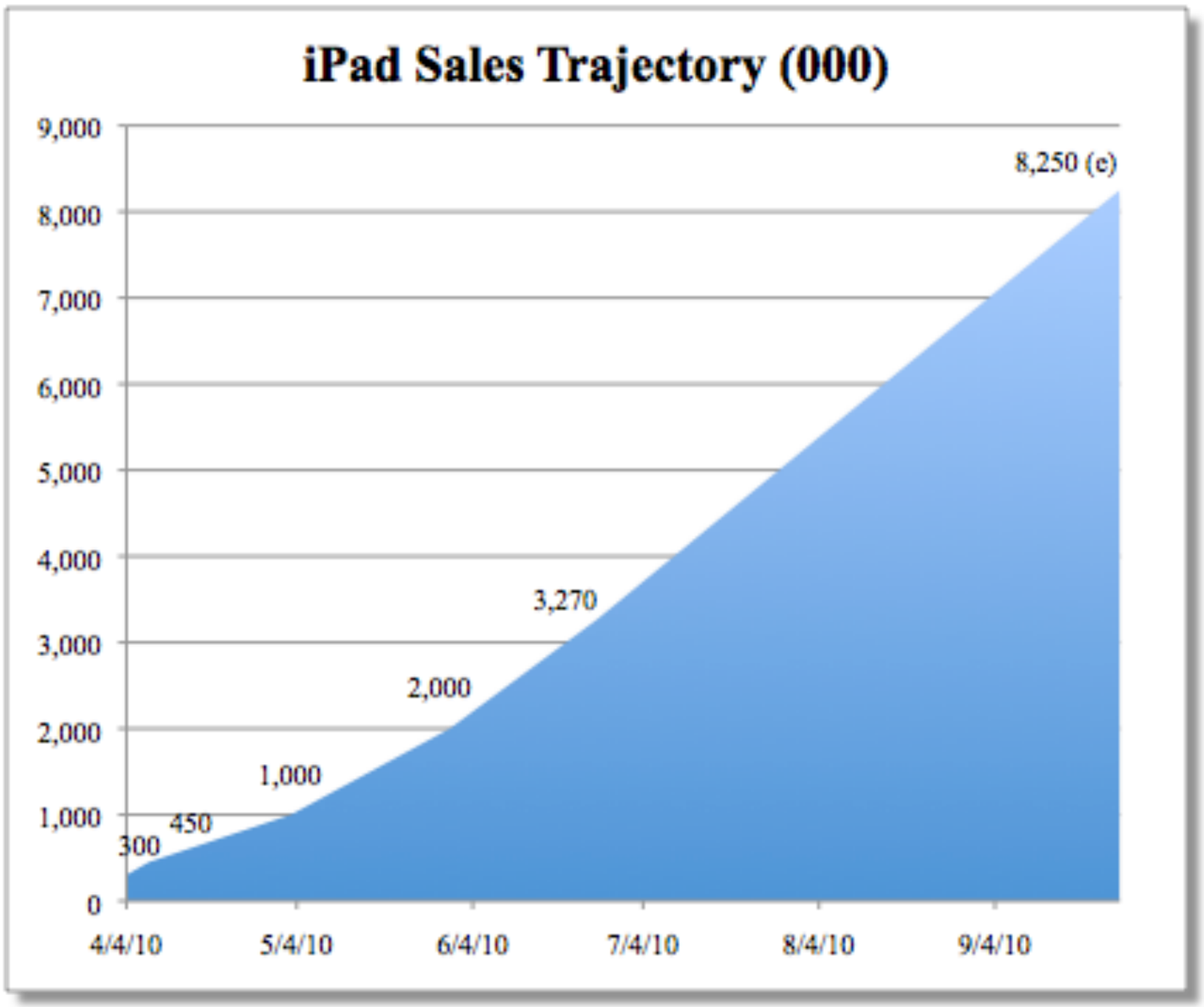

IT'LL SIMPLIFY A LOT OF TASKS YOU NEVER HAD TO DO BEFORE
iPad
Appl
CHAPPATTE
Int'l Herald Tribune

Presentation Agenda

- Background
- Mobile-to-cloud Infrastructure
- App examples w/demos
- Lessons learned

“Apple's iPad Sales Blow Past Projections”

San Jose Business Journal March 14, 2011



Sources: Company reports and the consensus estimate for Q4

FORTUNE

Apple sold 14.8M iPads in 2010

During the release of the iPad 2 in March 2011, Steve Jobs said that just under 15 million iPads had been sold in the device's first nine months on the market — more than all other tablet PCs combined

Apple iPad Sales Projected to Hit 28 Million in 2011

DailyFinance
An AOL Money & Finance Site

Posted 10:00 AM 09/09/10
http://srph.it/ak77OA

http://tech.fortune.cnn.com/2010/10/05/how-many-ipads-has-apple-really-sold/

http://www.publishersweekly.com/pw/by-topic/industry-news/financial-reporting/article/44882-ipad-total-nears-7-5-million.html

http://www.dailyfinance.com/story/company-news/apple-ipad-sales-projected-to-hit-28-million-in-2011/19626822/

Mobile-Cloud Infrastructure

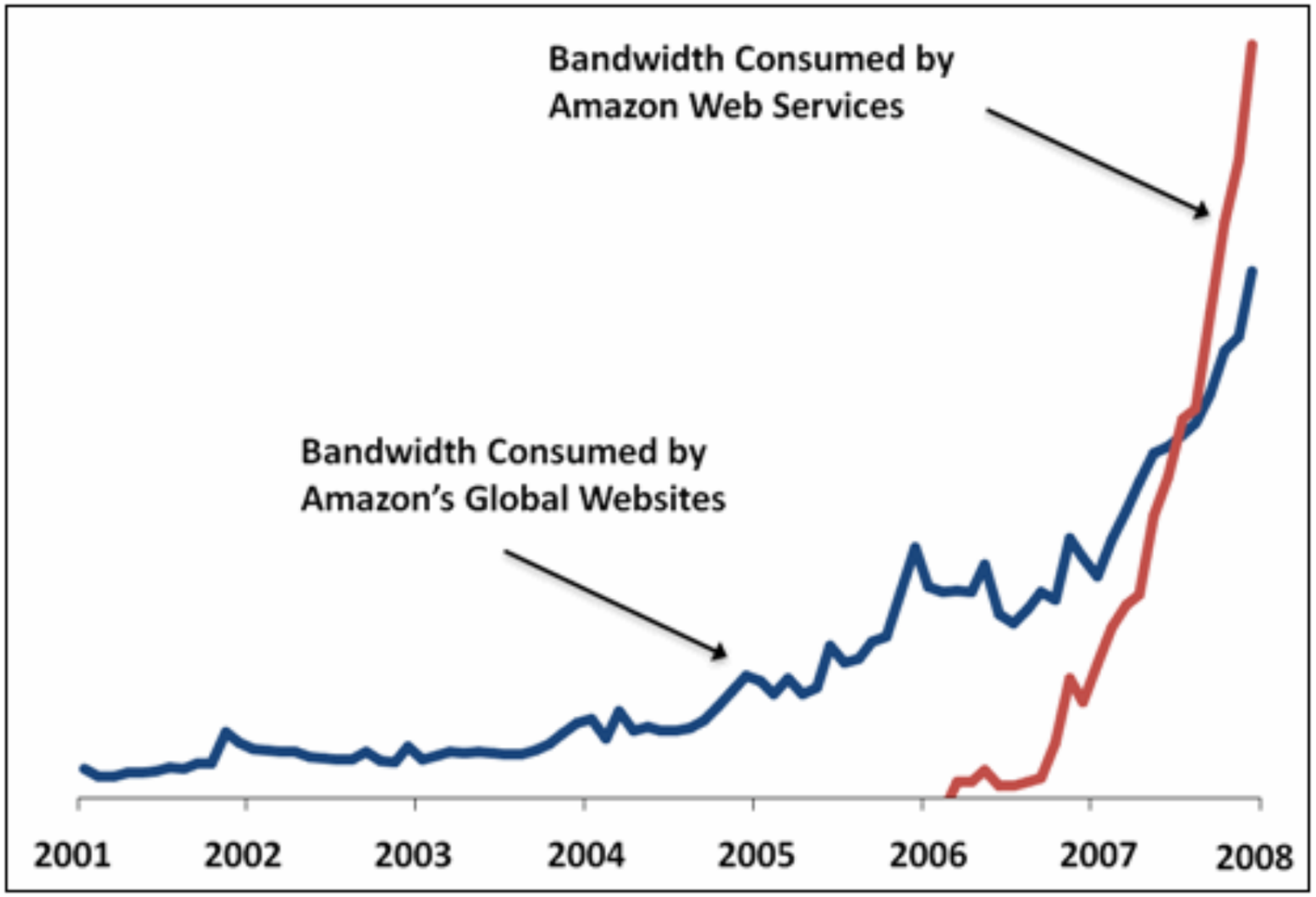
- Internet Connection (Wi-Fi or 3G)
- Database/WebServer (e.g. kinasedata.com: GoDaddy/HostGator)
  - Apache + php
  - mysql

- StructureSearch/Application Server (Amazon Cloud-LAMP)
  - Apache + php, EC2 instances
  - mysql, RDS instances
  - ChemAxon JChem + JChemWebServices (includes tomcat/axis2, etc.)
  - Chemene JSDraw (javascript)/ MMDS (objective-C library)

- RICE.....

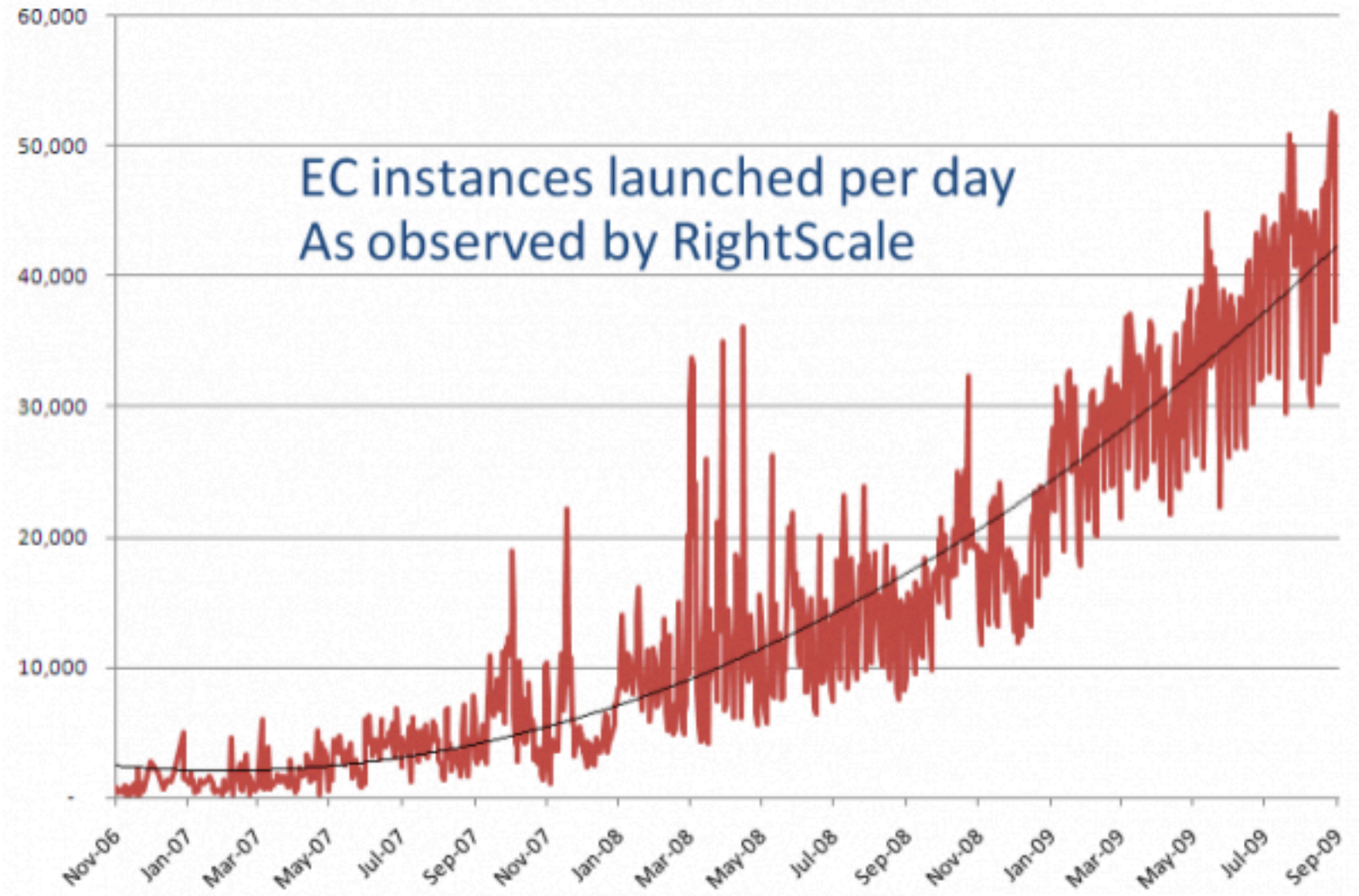
Amazon AWS Growth

In January 2008, Amazon announced that the **Amazon Web Services** consume more bandwidth than its entire global network of **Amazon.com** retail sites



Source: http://aws.typepad.com/aws/2008/05/lots-of-bits.html

Amazon AWS Growth (cont.)



Source: http://blog.rightscale.com/2009/10/05/amazon-usage-estimates/

Nov 1, 2010: Amazon announced AWS Free Usage Tier

New AWS customers will be able to run a free Amazon EC2 Micro Instance for a year, while also leveraging 5 GB of Amazon S3 storage, and free tiers of Amazon Elastic Block Store, Amazon Elastic Load Balancer, and AWS data transfer.

Cloud Computing - In Practice

Amazon EC2 | Amazon Elastic MapReduce | Amazon CloudFront

Navigation

Region: US East

- EC2 Dashboard

INSTANCES
- Instances
- Spot Requests

IMAGES
- AMIs
- Bundle Tasks

ELASTIC BLOCK STORE
- Volumes
- Snapshots

NETWORKING & SECURITY
- Elastic IPs
- Security Groups
- Key Pairs
- Load Balancers

Amazon EC2 Console Dashboard

Getting Started

To start using Amazon EC2 you will want to launch a virtual server, known as an Amazon EC2 instance.

Launch Instance

Note: Your instances will launch in the US East (Virginia) region.

Service Health

Current Status	Details
Amazon EC2 (US East - N. Virginia)	Service is operating normally

View complete service health details

My Resources

You are using the following Amazon EC2 resources in the US East (Virginia) region:

Refresh

- 1 Running Instance
- 1 Elastic IP
- 1 EBS Volume
- 4 EBS Snapshots
- 2 Key Pairs
- 2 Security Groups
- 0 Load Balancers

Related Links

- Documentation
- All EC2 Resources
- Forums
- Feedback
- Report an Issue

Navigation

Region: US East

- EC2 Dashboard

INSTANCES
- Instances
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IMAGES
- AMIs
- Bundle Tasks

ELASTIC BLOCK STORE
- Volumes
- Snapshots

NETWORKING & SECURITY
- Elastic IPs
- Security Groups
- Key Pairs
- Load Balancers

My Instances

Launch Instance | Instance Actions | Reserved Instances | Show/Hide | Refresh | Help

Viewing: All Instances | All Instance Types

1 to 1 of 1 Instances

Instance	AMI ID	Root Device Type	Type	Status	Lifecycle	Public DNS	Security Groups	Key Pair Name	Mon
i-294bf742	ami-2cb05345	instance-store	m1.small	running	normal	ec2-184-73-205-197.compute-1.amazonaws.com	defaultLAMP	kinasedata	

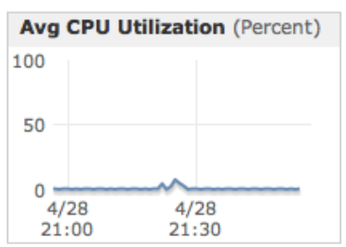
1 EC2 Instance selected

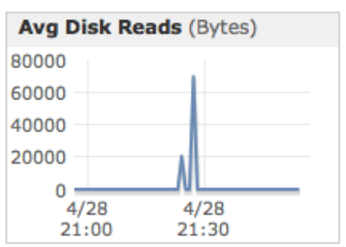
EC2 Instance: i-294bf742

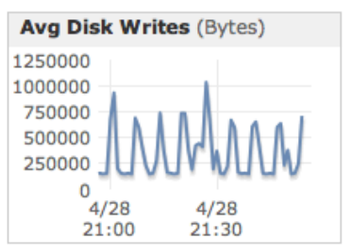
Description | Monitoring

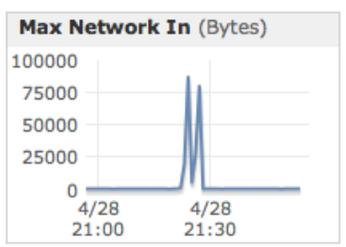
Graphs are for 1 instance that has monitoring enabled. Times are displayed in UTC.

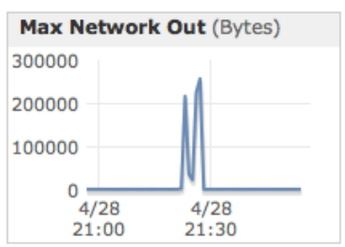
Time Range: Last Hour | Refresh







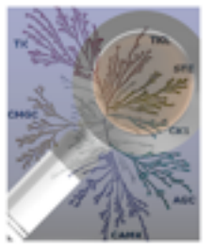




Eidogen-Sertanty

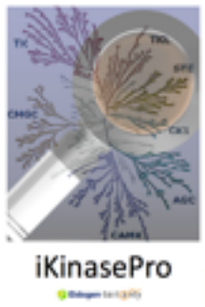
Eidogen-Sertanty's iPhone and iPad Apps

iKinase



iKinasePro

iProtein



iKinasePro

Mobile Reagents

Reaction101

Yield101

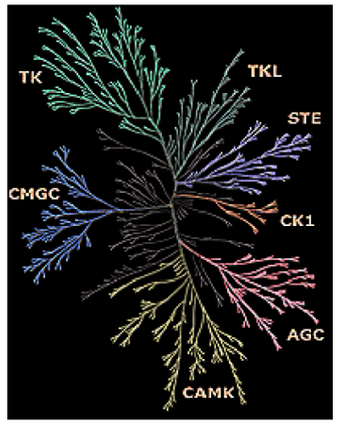
Reaction101

Yield101

Mobile Reagents

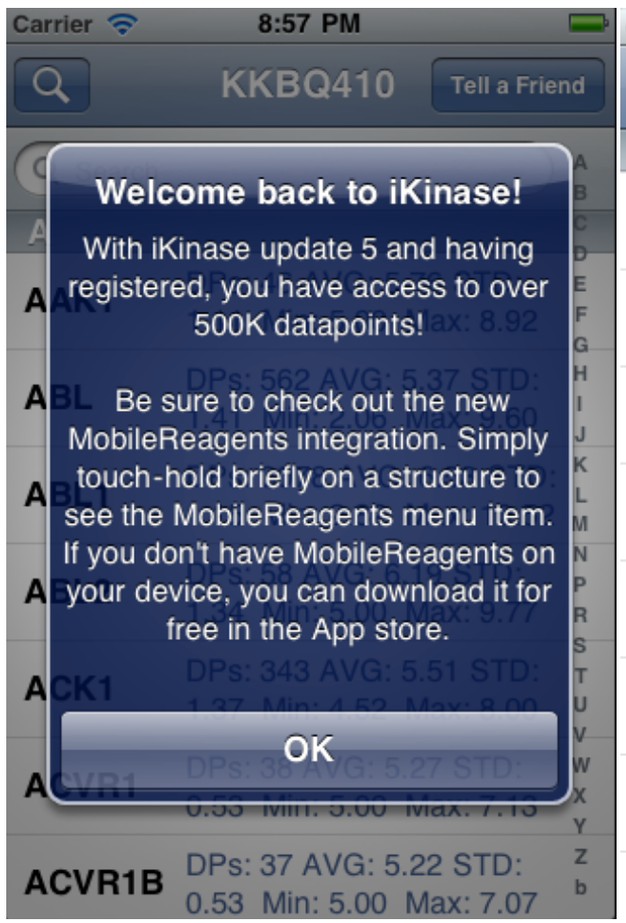
** Reaction101 and Yield101 - built collaboratively with Molecular Materials Informatics, Inc.*

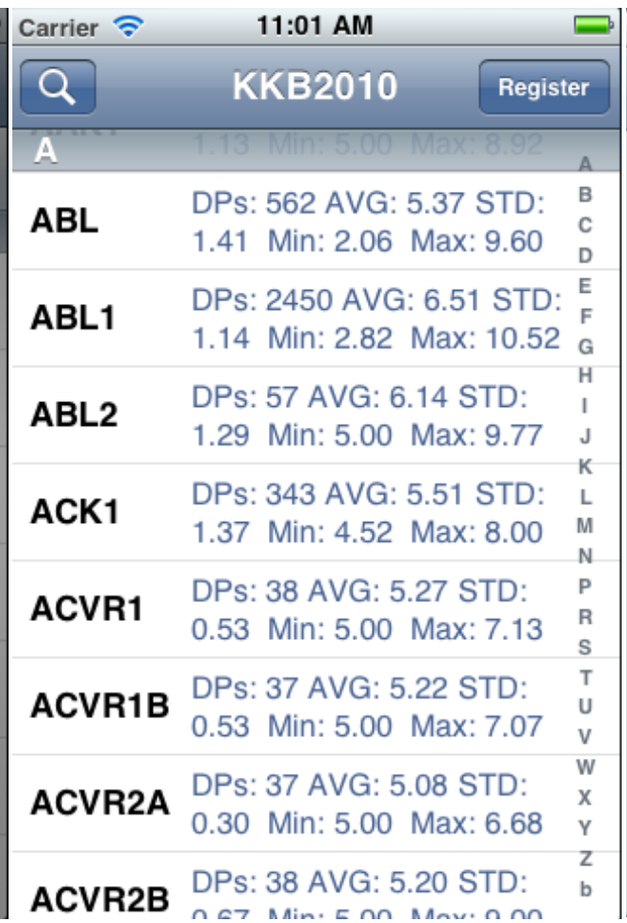
iKinase - 12/31/09 (v1) ... 5/5/11 (v5.1)

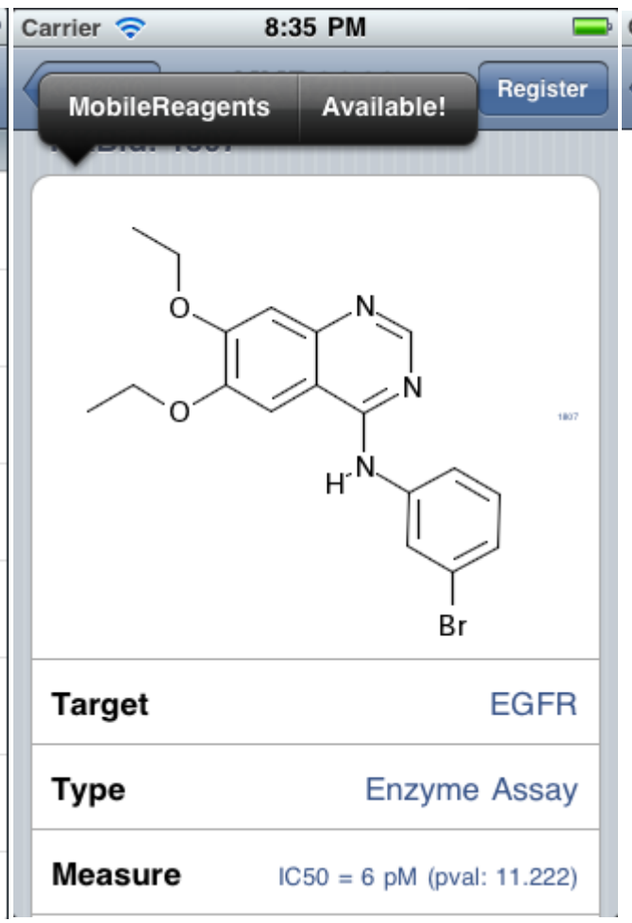


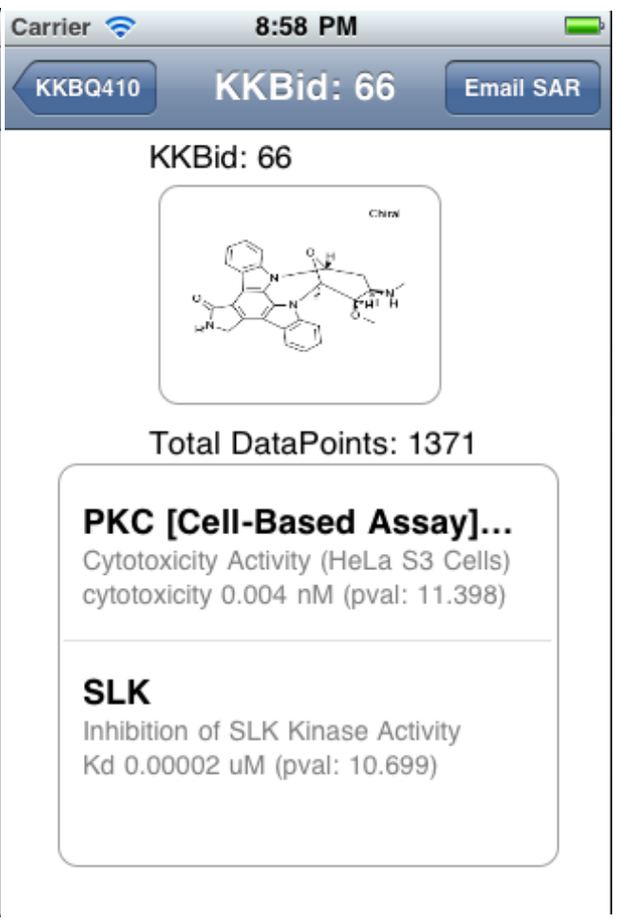
iKinase

Eidogen-Sertanty







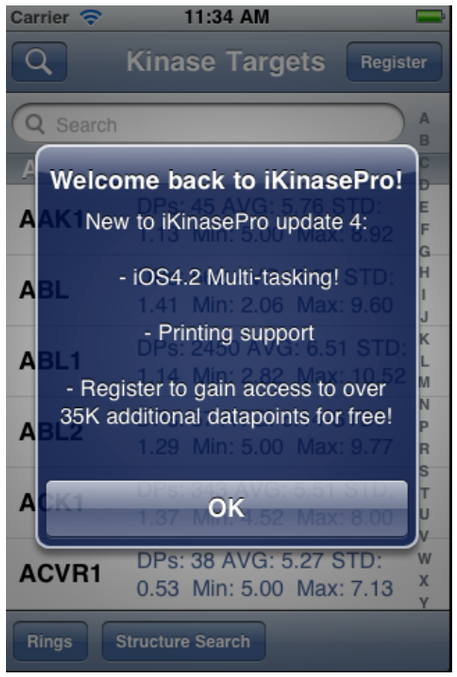


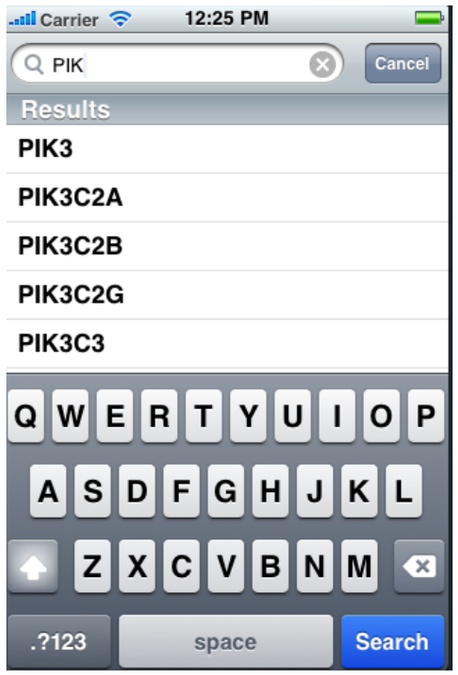
iKinase iPhone Demo

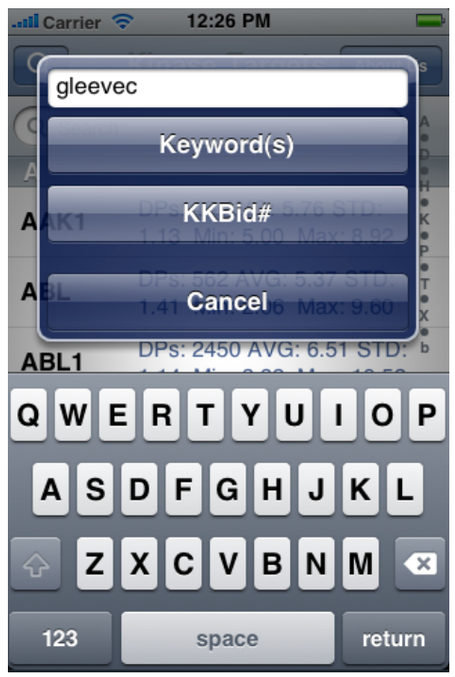
iKinasePro (iOS4 and iPad) - 3/10 (v1) ... 6/11 (v5.51)

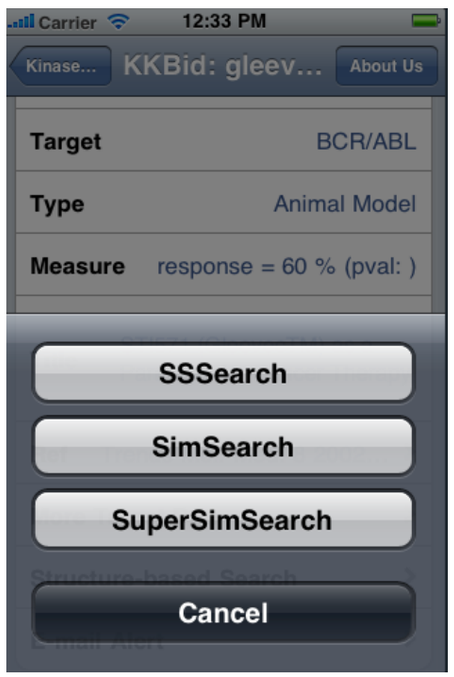
iKinasePro

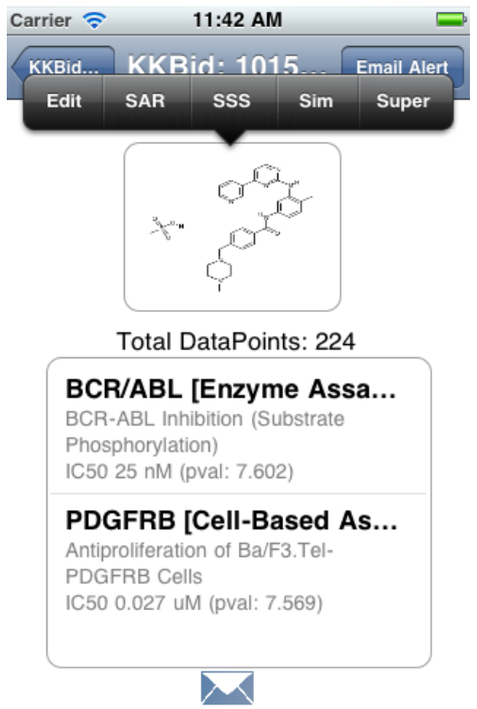
Eidogen-Sertanty

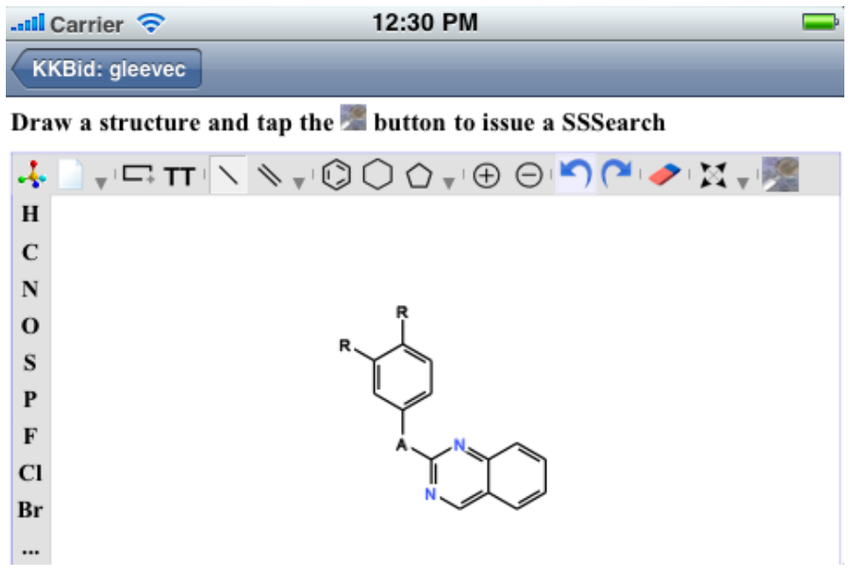


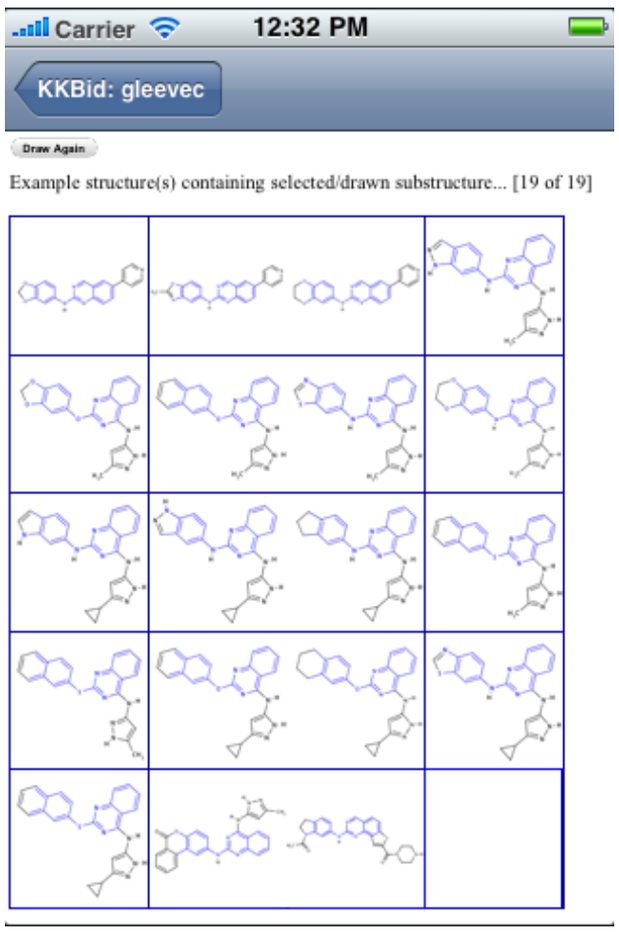


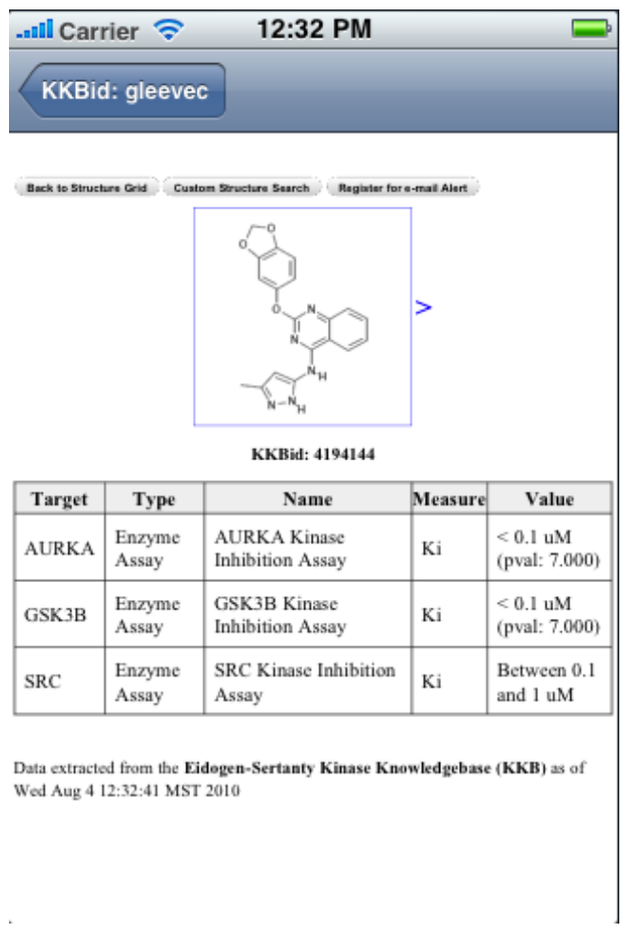




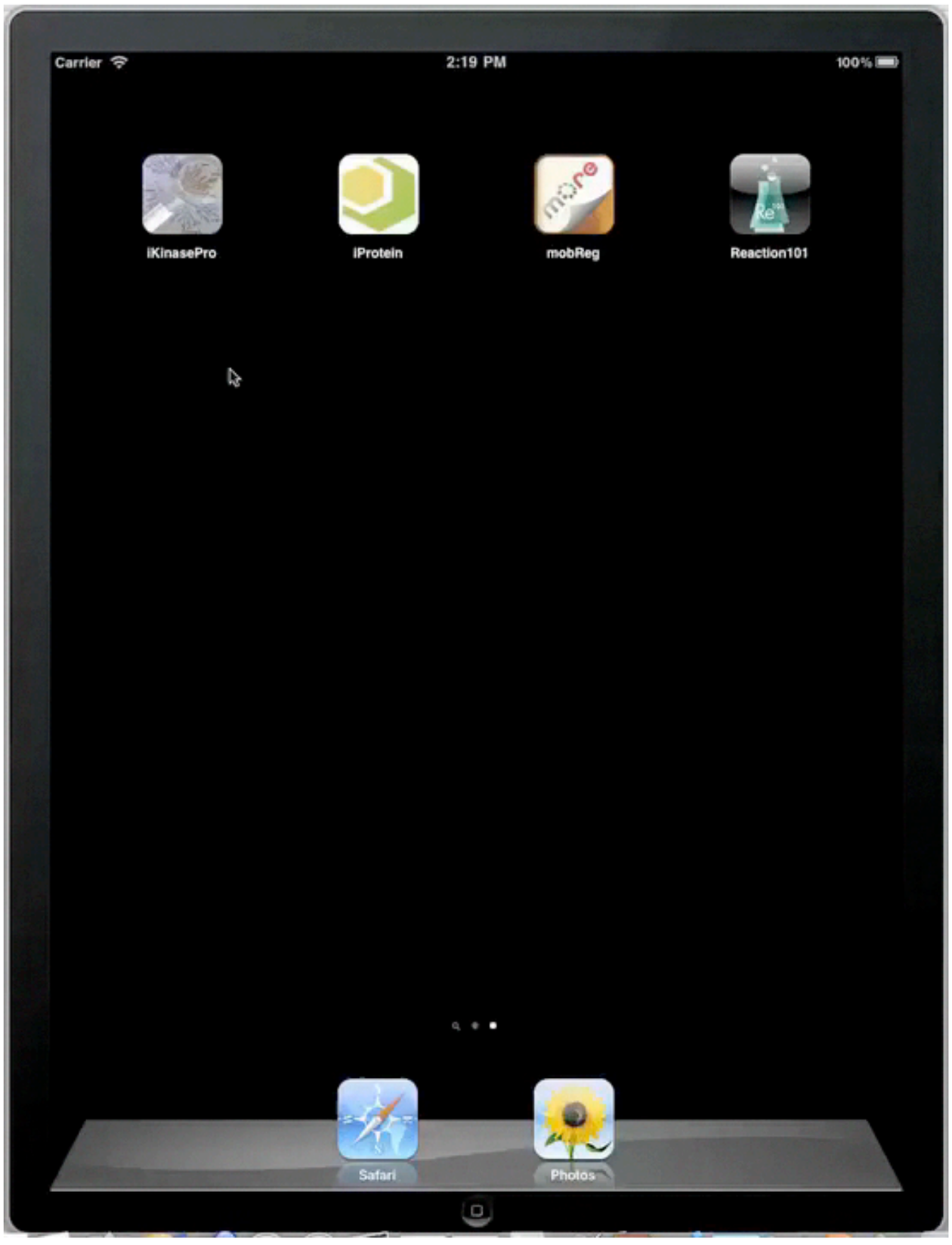








iKinasePro (iOS4 + iPad) Demos

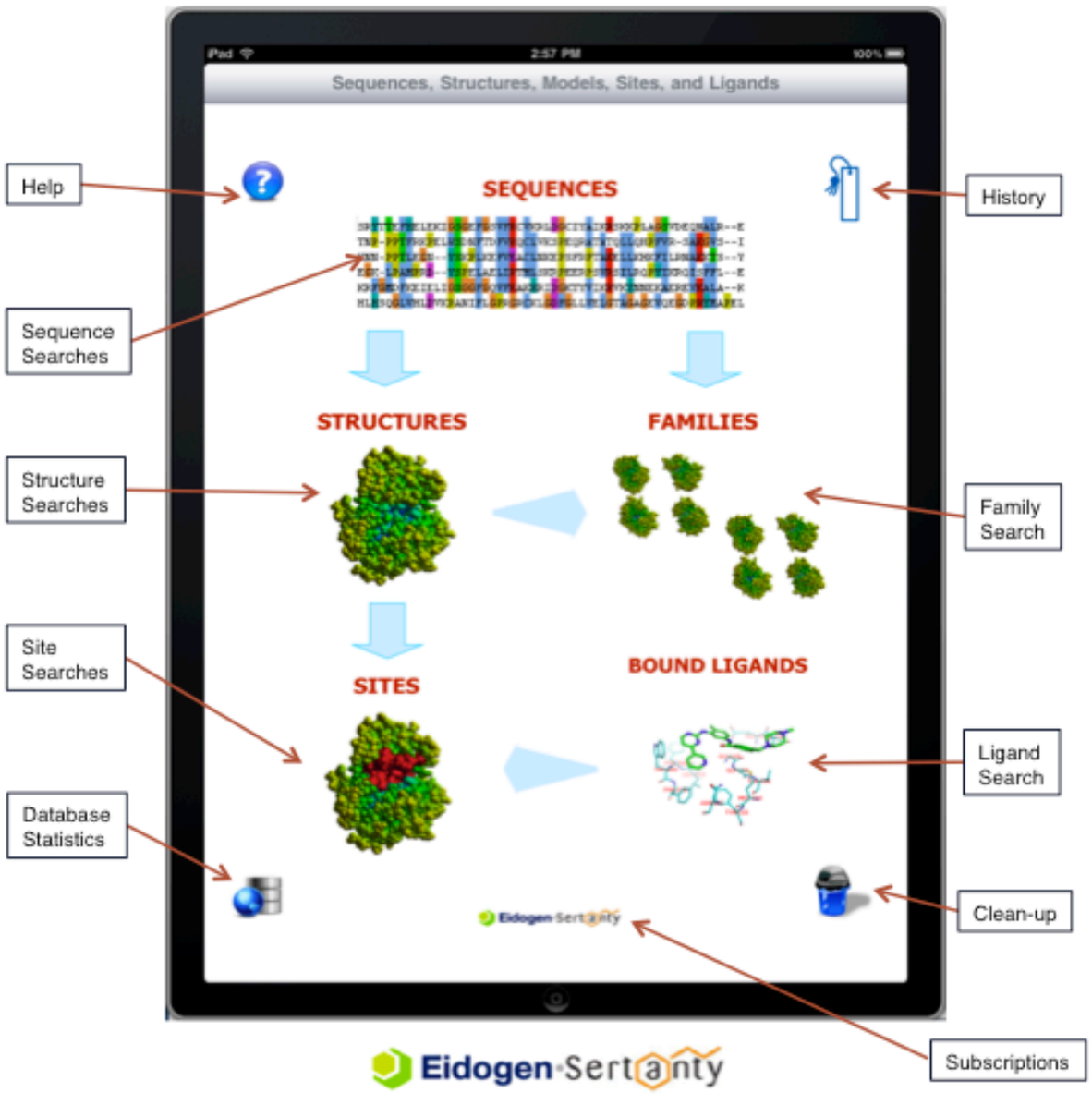


http://www.youtube.com/watch?v=p_wyys4Tkxk

iProtein - 8/10 (v1) ... 5/11 (v4)

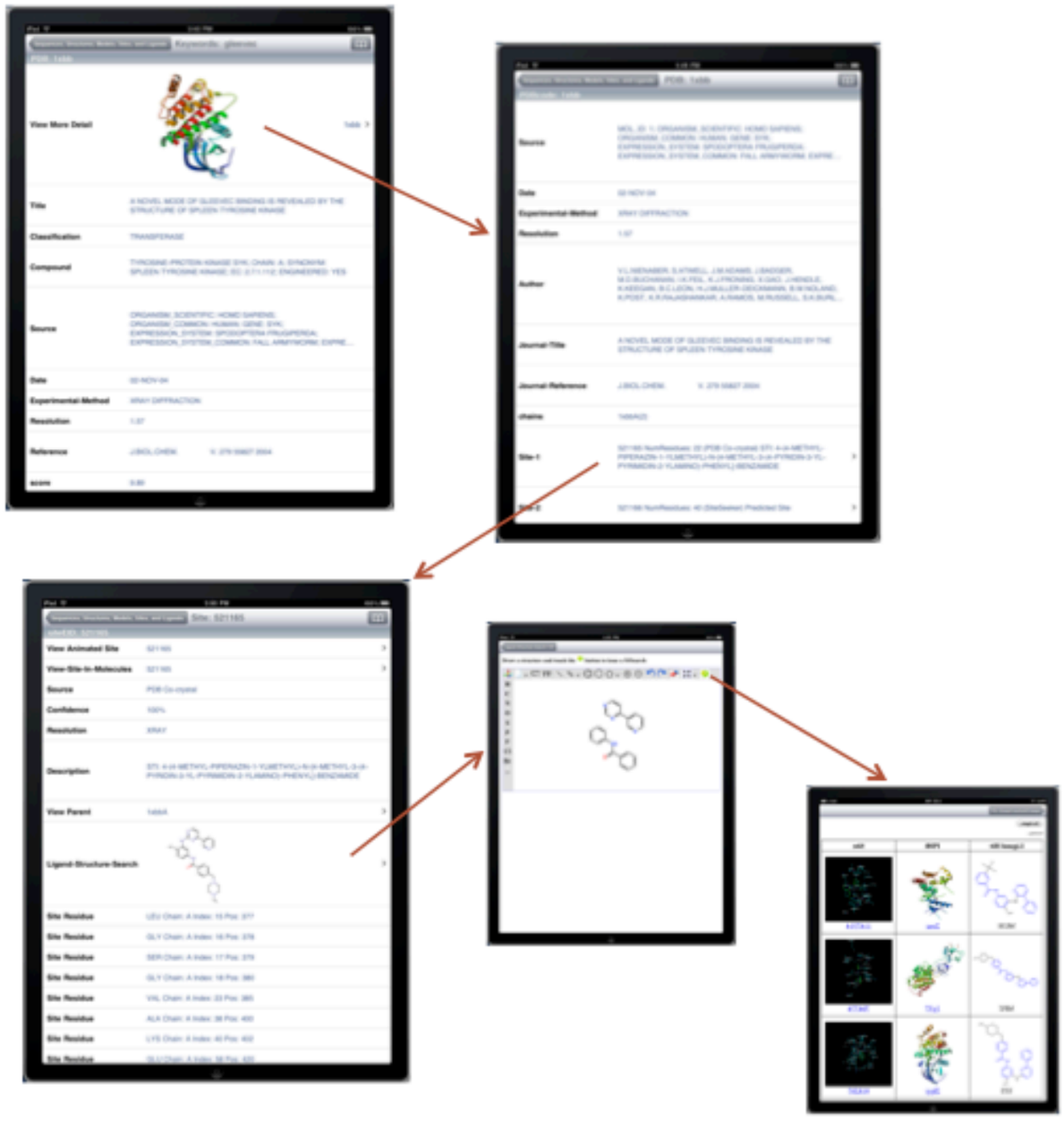
Accessing TIP content through iProtein

Through iProtein, the TIP database can be surveyed by Sequence, Structure/ Model, Site, head-nodes (i.e. protein family), and by bound ligand structure searches. Simply click on any image in the main page to initiate a search. Future versions of iProtein may enable more complex searching – e.g. protein structure search, site-search, etc. So stay tuned….

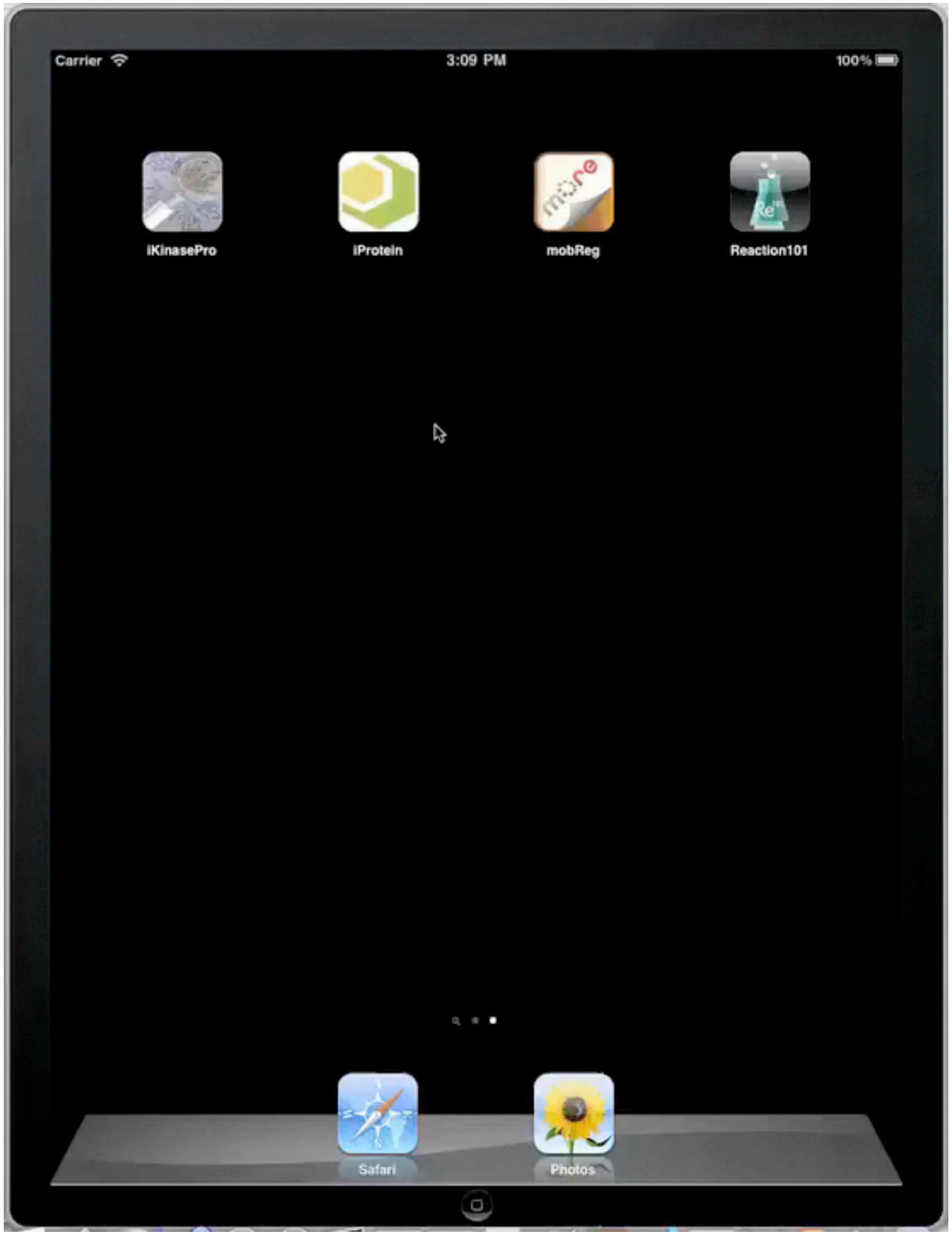


Structure/Model Searches (cont)

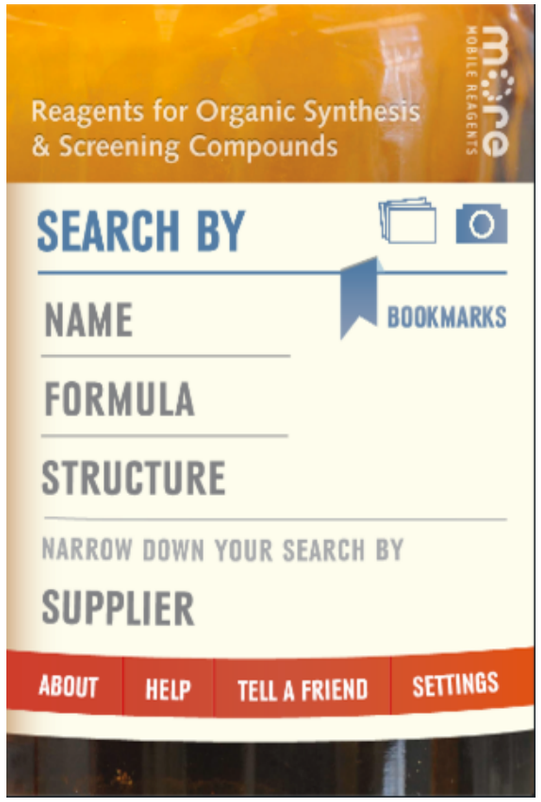
Click on the arrow (when present) to see more data. You can click the arrow (“>”) to see more detail. If there is a bound ligand, you can initiate ligand-based searches.

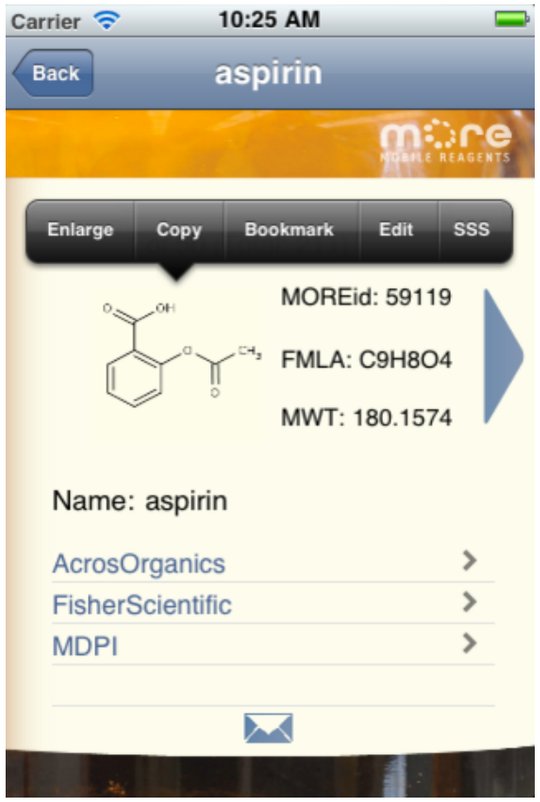


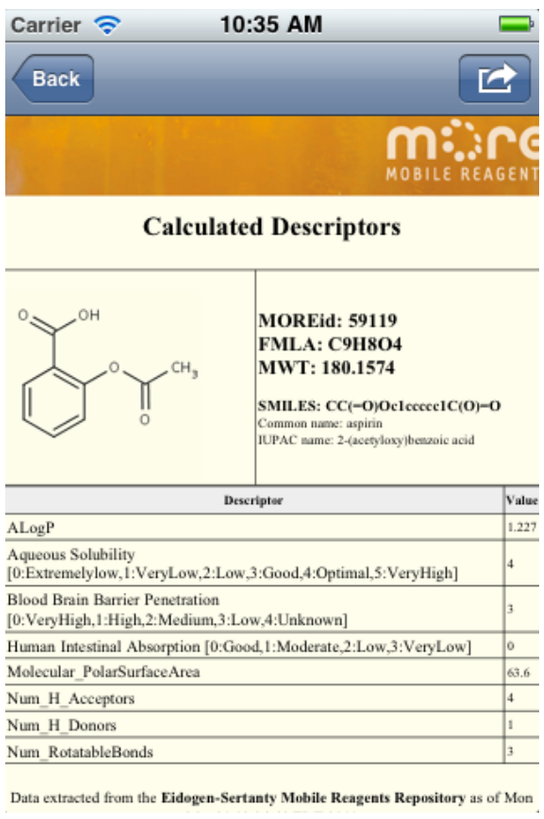
iProtein iPad Demo

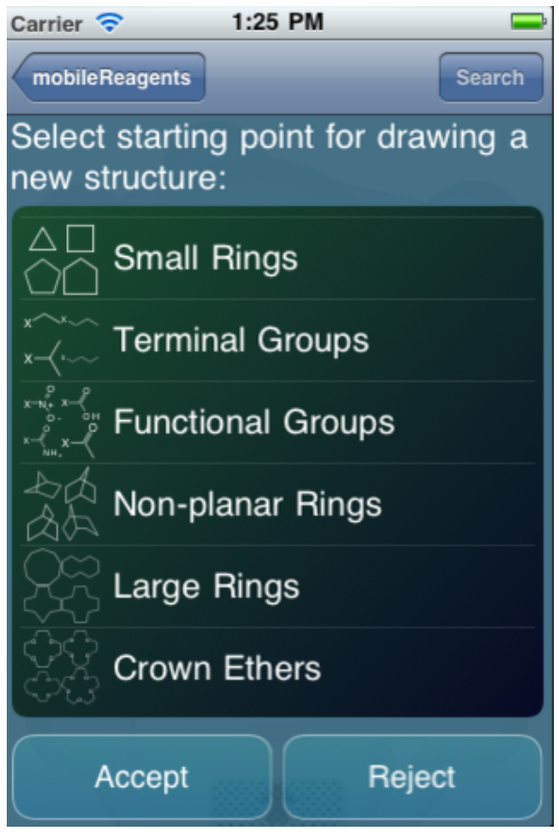


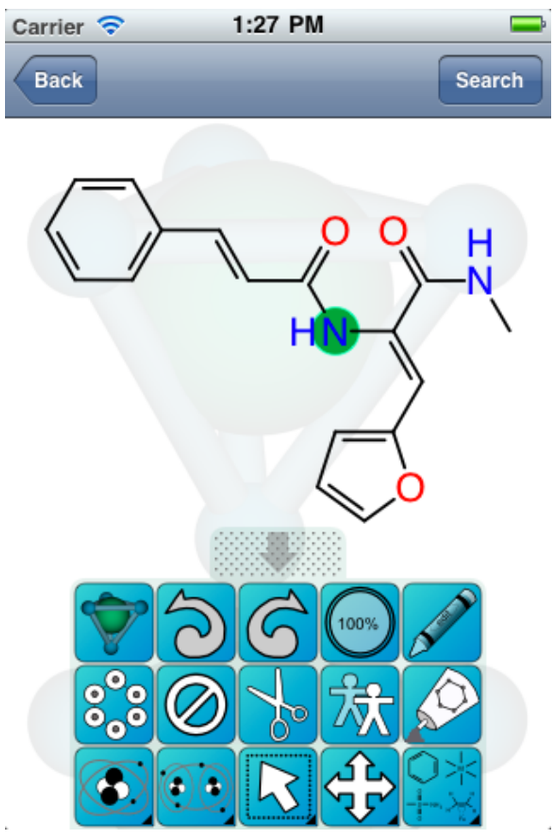
Mobile Reagents (iOS4) - 10/5/10 (v1) ... 6/1/11 (v5.51)







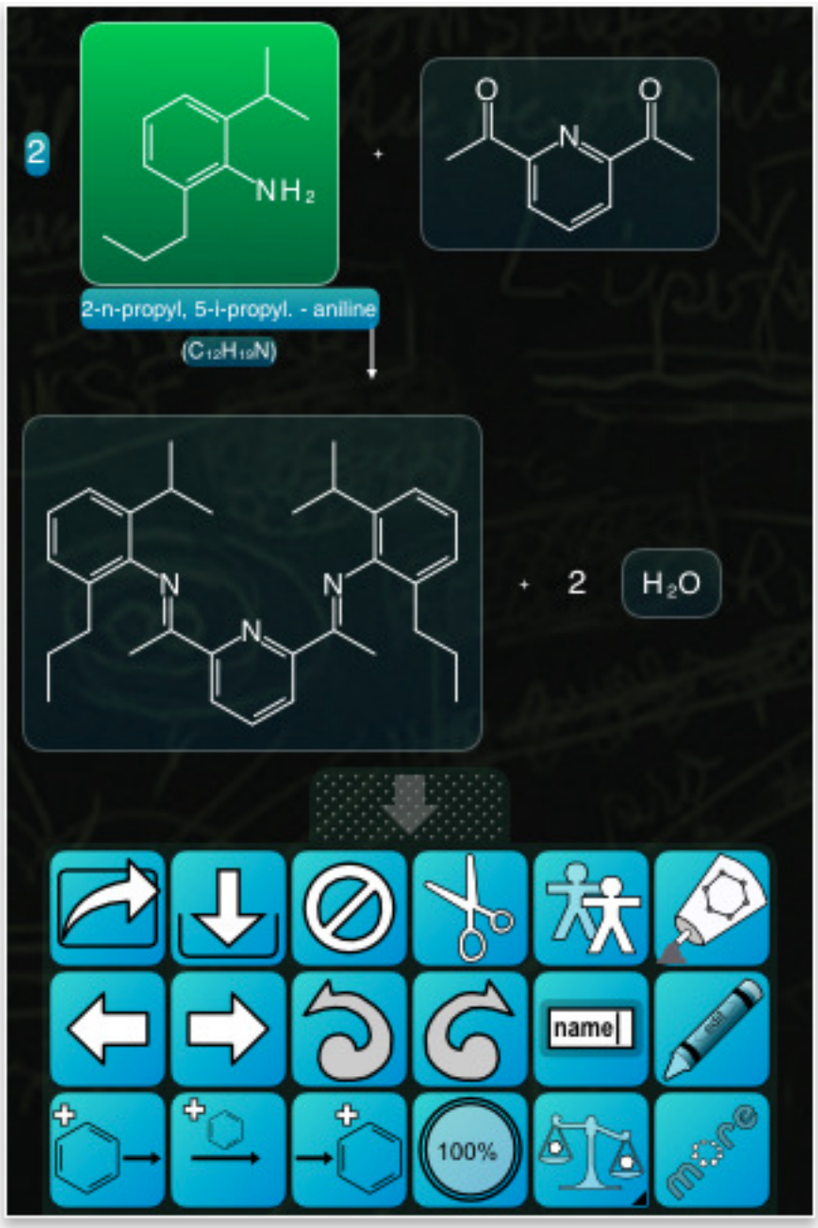


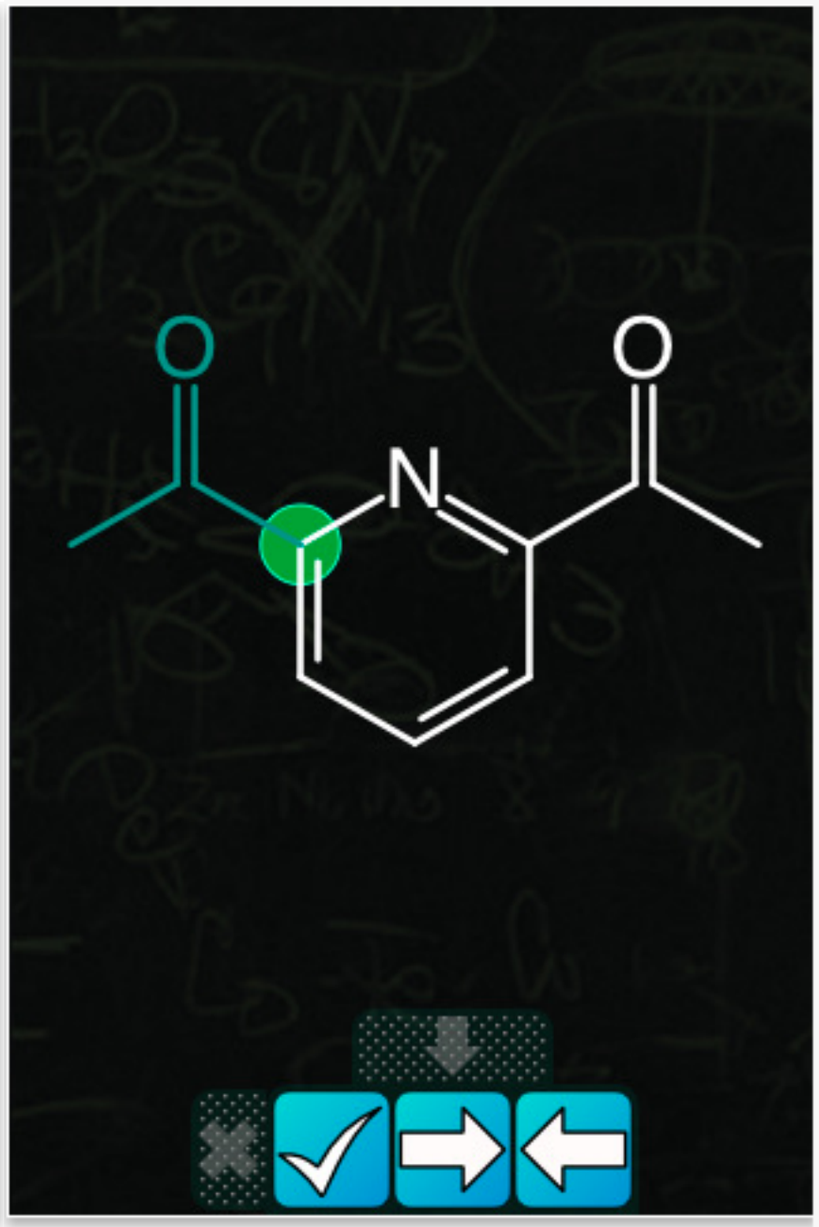


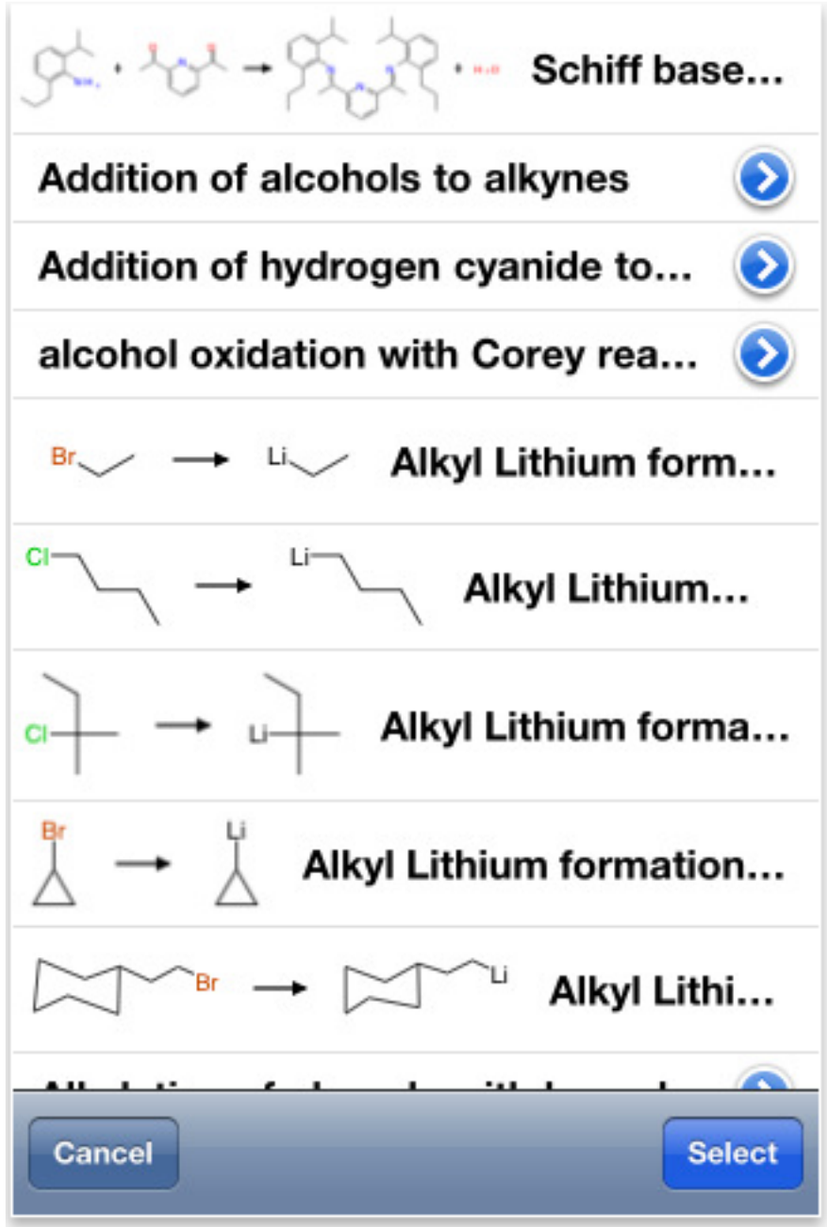
Mobile Reagents iPhone Demo

Reaction101 (iOS4) - 2/11 (v1) ... 3/11 (v1.01)

Reaction101



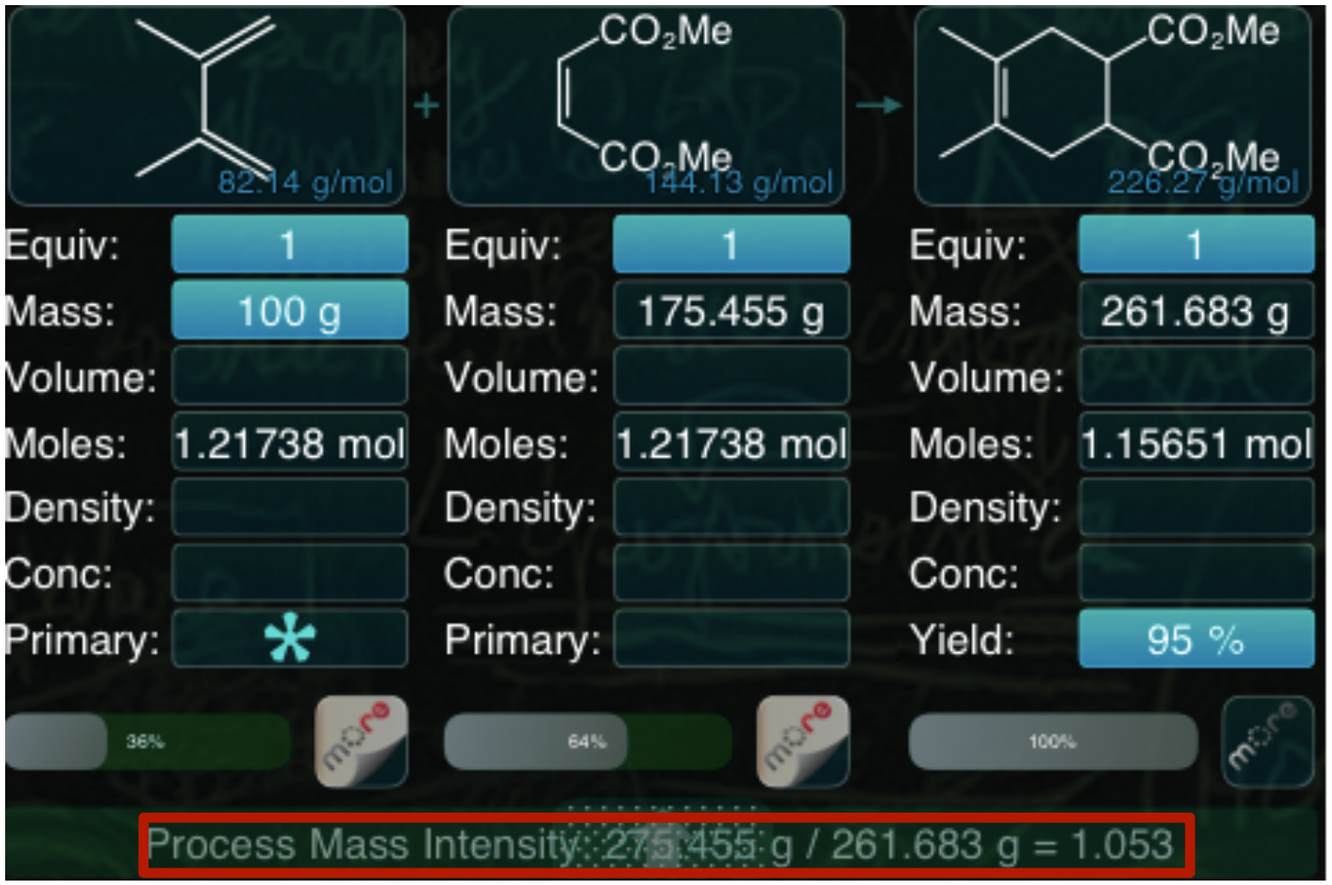


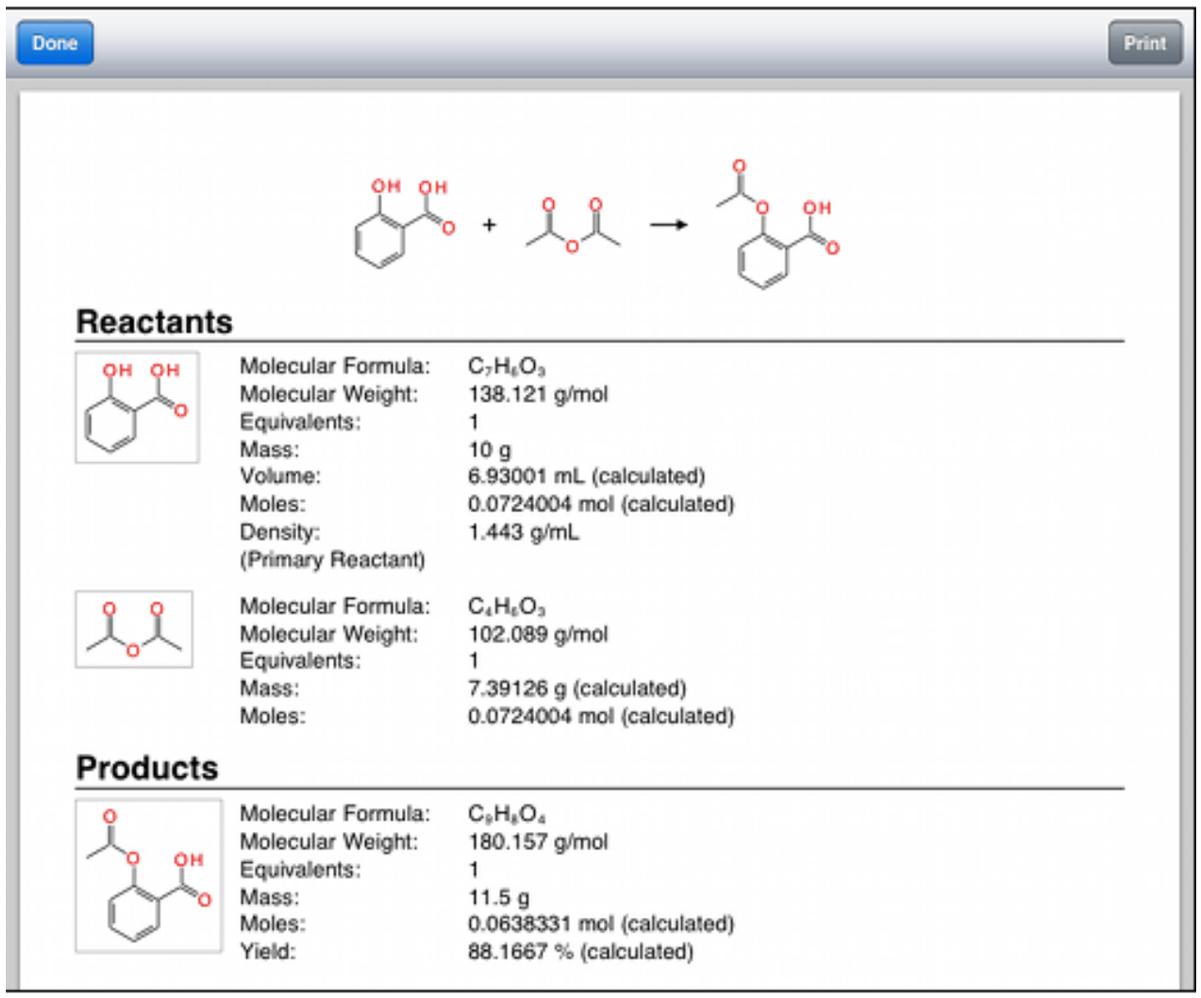


RXN101 iPhone Demo

Yield101 (iOS4) 4/11 (v1) ... 6/11 (v1.02)

Yield101





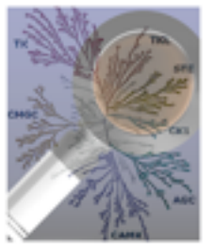
PMI = Process Mass Intensity

= (Mass of raw materials input) / (Mass of desired output)

R.A Sheldon, Chem. Ind., 1997, 12-15. R.K. Henderson, J. Kindervater, J.B. Manley, "Lessons learned through measuring green chemistry performance", accessed 27-May-2009 via the ACS GCI Pharmaceutical Roundtable site.

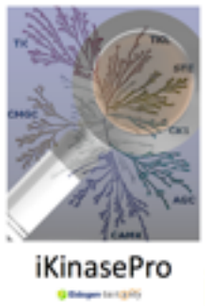
Eidogen-Sertanty's iPhone and iPad Apps

iKinase



iKinasePro

iProtein



iKinasePro

Mobile Reagents

Reaction101

Yield101

Reaction101

Yield101

Mobile Reagents

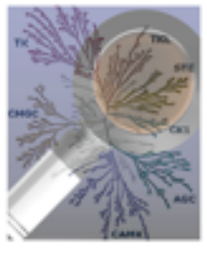
** Reaction101 and Yield101 - built collaboratively with Molecular Materials Informatics, Inc.*

Lessons Learned...

- Devices are worldwide and pervasive
  - ➡ Millions of people surf the app store!!!
- Development environment is very good
  - ➡ Large activation energy to start, Apple's CDAs can be a hindrance (contrasted with LAMP)
- Don't expect large app revenues
  - ➡ People prefer free apps (in app purchase woes)
- Apps can be phenomenal marketing vehicles
  - ➡ People come to you
- Patience is important...
  - ➡ It is tough to keep up with Apple innovation speed

Enter Drawing for an iPhone or iPad App

iKinase



iKinasePro

Reaction101

Yield101

Send an e-mail to:

To: **mobileapps@eidogen-sertanty.com**

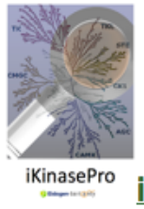
Subj: **ACS Denver {iPod or iPhone or iPad}**

10 of each will be given away

Eidogen-Sertanty

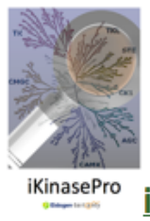
Acknowledgements

- Dr. Rajan Sharma and Prof. Stephan Schurer
  - 

iKinase 

iKinasePro
- Dr. Maurizio Bronzetti
  - 
Mobile Reagents 

Reaction101
- Dr. Alex Clark
  - MMDSLib: 
Mobile Reagents 
iProtein
  - 

Reaction101 
Yield101
- Dr. Tony Yuan
  - Chemene: 

iKinasePro 
Mobile Reagents 
iProtein

About Eidogen-Sertanty, Inc.

- Knowledge-Driven Solutions Provider
  - Sertanty established in 2003, acquired Libraria assets
  - Sertanty acquired Eidogen/Bionomix in 2005→ Eidogen-Sertanty
  - $20M invested: Libraria ($6M), Eidogen/Bionomix ($12M), Sertanty/ES ($2M)
  - 15 distributed FTE's (5 US and 10 India)
  - Worldwide (bio)pharmaceutical customer base
  - Cash-positive since 2006

- Databases & Software – Annual Subscriptions
  - *TIP*™ - Protein Structural Informatics Platform
  - *KKB*™ - Kinase SAR and Chemistry Knowledgebase
  - CHIP™ - Chemical Intelligence Platform

- DirectDesign™ Fee-For-Service
  - In Silico Target Screening ("Target Fishing" and Repurposing)
  - Target and compound prioritization services
  - Fast Follower Design: Novel, Patentable Leads

Introduction – PMI by industry

Industry	Typical PMI	Annual Production tonnage
Oil refining	~1.1	10^6 – 10^8
Bulk chemicals	<2 to 6	10^4 – 10^6
Fine chemicals	6 to >50	10^2 – 10^4
Pharma	26 to >100	10 – 10^3

Pharma: Rapid product launches (unmet medical needs, patent life)

Constrains development time for process optimization

References: R.A Sheldon, Chem. Ind., 1997, 12-15. R.K. Henderson, J. Kindervater, J.B. Manley, "Lessons learned through measuring green chemistry performance", accessed 27-May-2009 via the ACS GCI Pharmaceutical Roundtable site.