

RESEARCH TOOLS

2012-Oct-16

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YOU ARE BEING BROADCAST/
RECORDED

WHO AM I?

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- [2012-05 - SIO Introduction to Computing free book](#)
- [2012-05 - More whale tracking - US West Coast](#)



Sampling an ocean core - time lapse of lab procedure

Kurt Schwehr [Subscribe](#) 158 videos



<http://youtu.be/BgYZyEXa0cs>

Ocean

Browse overview | Select showcase Ocean

Travel to new depths with Ocean in Google Earth. Watch this video to see Ocean in Google Earth and learn about our partners that have contributed data.

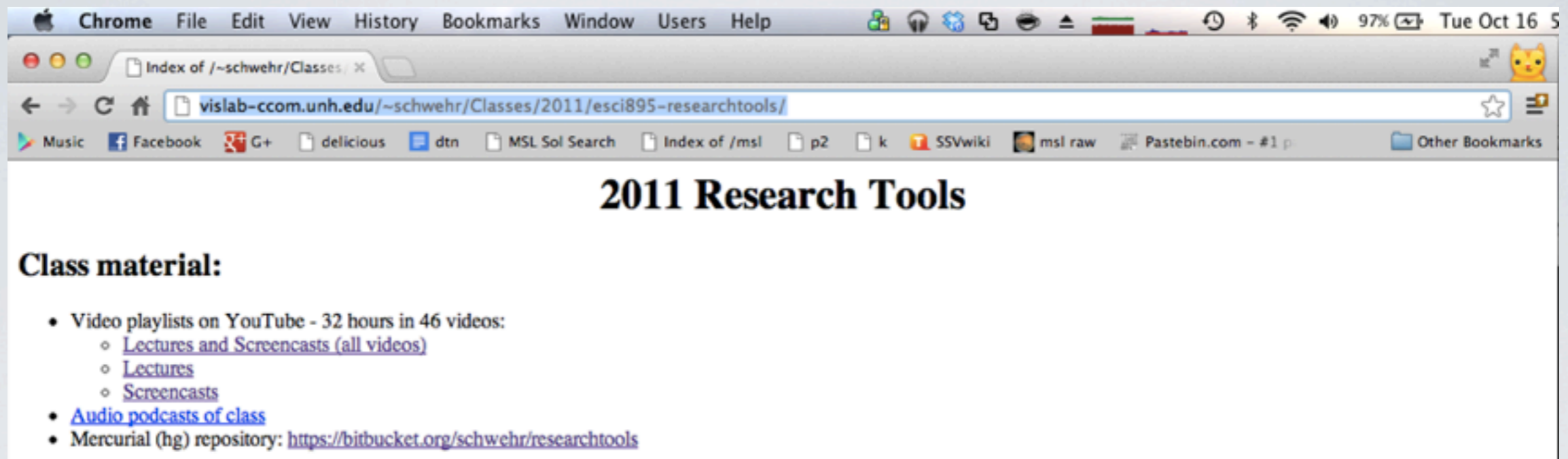


- #### Explore the ocean
- World of Deep Sea explored by "Shinkai 6500"
 - Ocean Seafloor
 - Deep Sea Vents
 - Pew Fellows 2012
 - Indonesia Discovery
 - Hope Spots I
 - Hope Spots II
 - Hope Spots III
 - Cousteau Ocean World
 - Research Discoveries
 - Shipwrecks

Explore the ocean
Download in Google Earth

GOOGLE HANG OUT LIVE / GOOGLE DOCS

RT 2011 CLASS VIDEOS



Chrome File Edit View History Bookmarks Window Users Help

Index of /~schwehr/Classes/ x

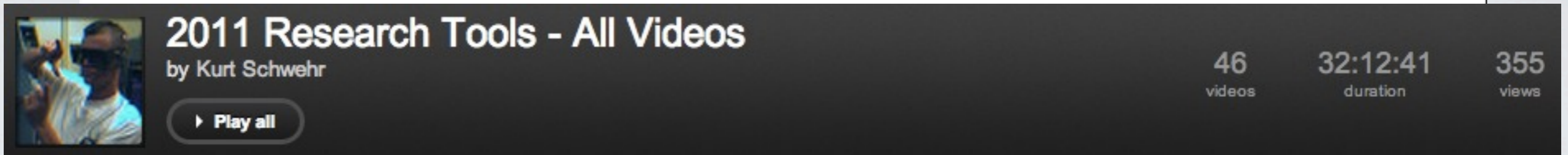
vislab-ccom.unh.edu/~schwehr/Classes/2011/esci895-researchtools/


Music Facebook G+ delicious dtn MSL Sol Search Index of /msl p2 k SSVwiki msl raw Pastebin.com - #1 p Other Bookmarks

2011 Research Tools

Class material:

- Video playlists on YouTube - 32 hours in 46 videos:
 - [Lectures and Screencasts \(all videos\)](#)
 - [Lectures](#)
 - [Screencasts](#)
- [Audio podcasts of class](#)
- Mercurial (hg) repository: <https://bitbucket.org/schwehr/researchtools>



 **2011 Research Tools - All Videos**
by Kurt Schwehr

▶ **Play all**

46 videos 32:12:41 duration 355 views

Introduction

The goal of this UNH course is to give students skills that will help them conquer data throughout their career. I am hoping to get this wrapped together as a book that people can take with them when they leave CCOM. I am releasing all course material under a creative commons non-commercial license, so that you can pass copies to your co-workers. 2011 is the first year that the course is being taught in this style. Please email me if you find any typos.

NOTE: The order was flipped on 2012-June-26 to have the beginning at the top.

No.	Date	Video	Present	Blog	Audio	Title/Notes
01	2011-08-30	YouTube mp4	pdf key	comment	mp3	Introduction
02	2011-09-01	YouTube mp4	pdf key	comment	mp3	IRC, Wiki, Basic Shell
03	2011-09-06	YouTube mp4	pdf key	comment	mp3	Wiki editing, Weather Demo, Command Line
04	2011-09-08	YouTube mp4	pdf key	comment	mp3	VMWare Ubuntu Image
05	2011-09-13	YouTube mp4	pdf key	comment	mp3	File types, Emacs intro, beginning scripts
06	2011-09-15	YouTube mp4	pdf key	comment	mp3	KeePassX and Dropbox
07	2011-09-20	YouTube mp4	pdf key	comment	mp3	Emacs and org-mode

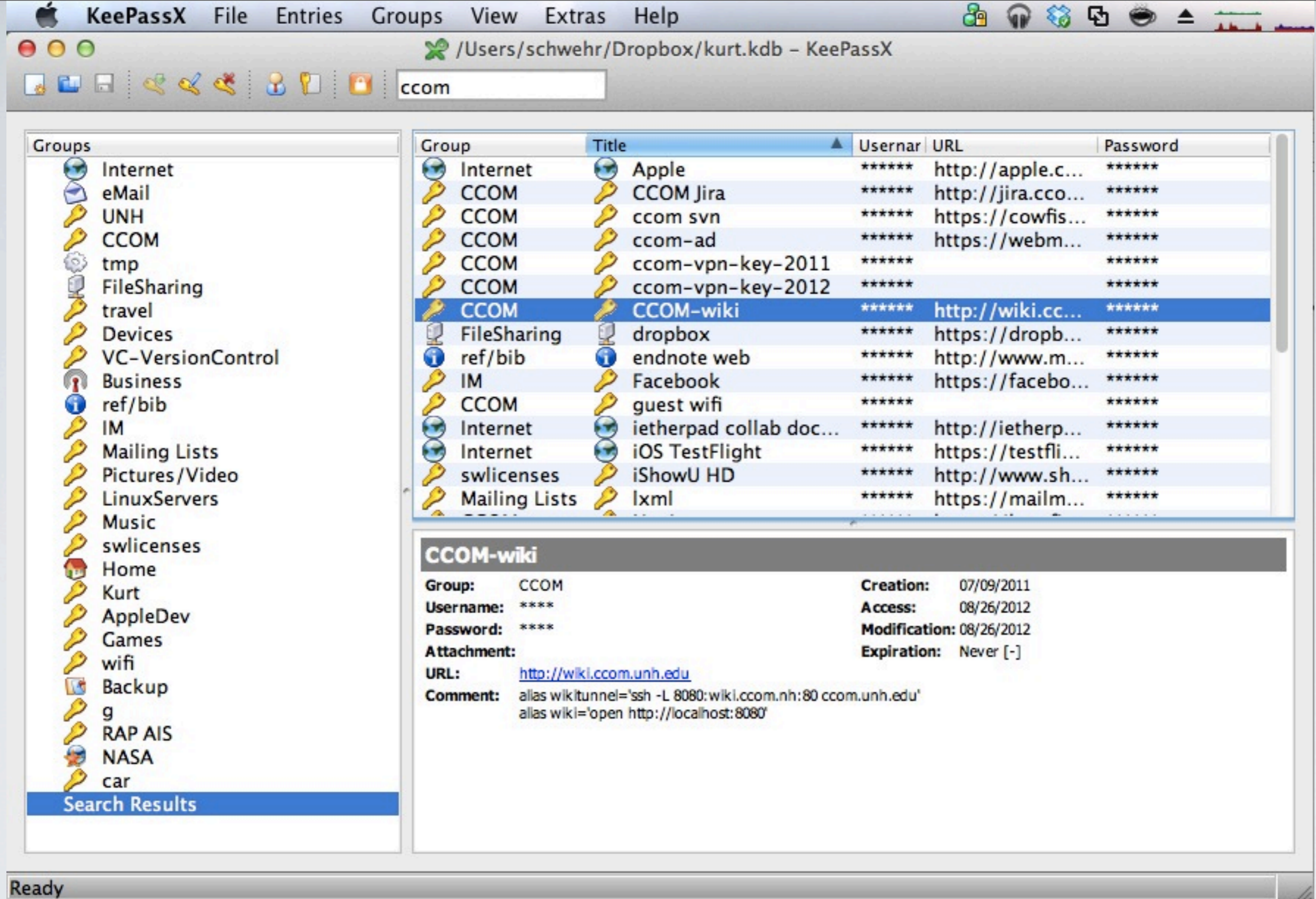
REPEATABLE RESEARCH

NOTE TAKING

OPEN SOURCE SOFTWARE & SW/DATA LICENSES

INTEROPERABILITY

- Can I share my data? With myself? With others?



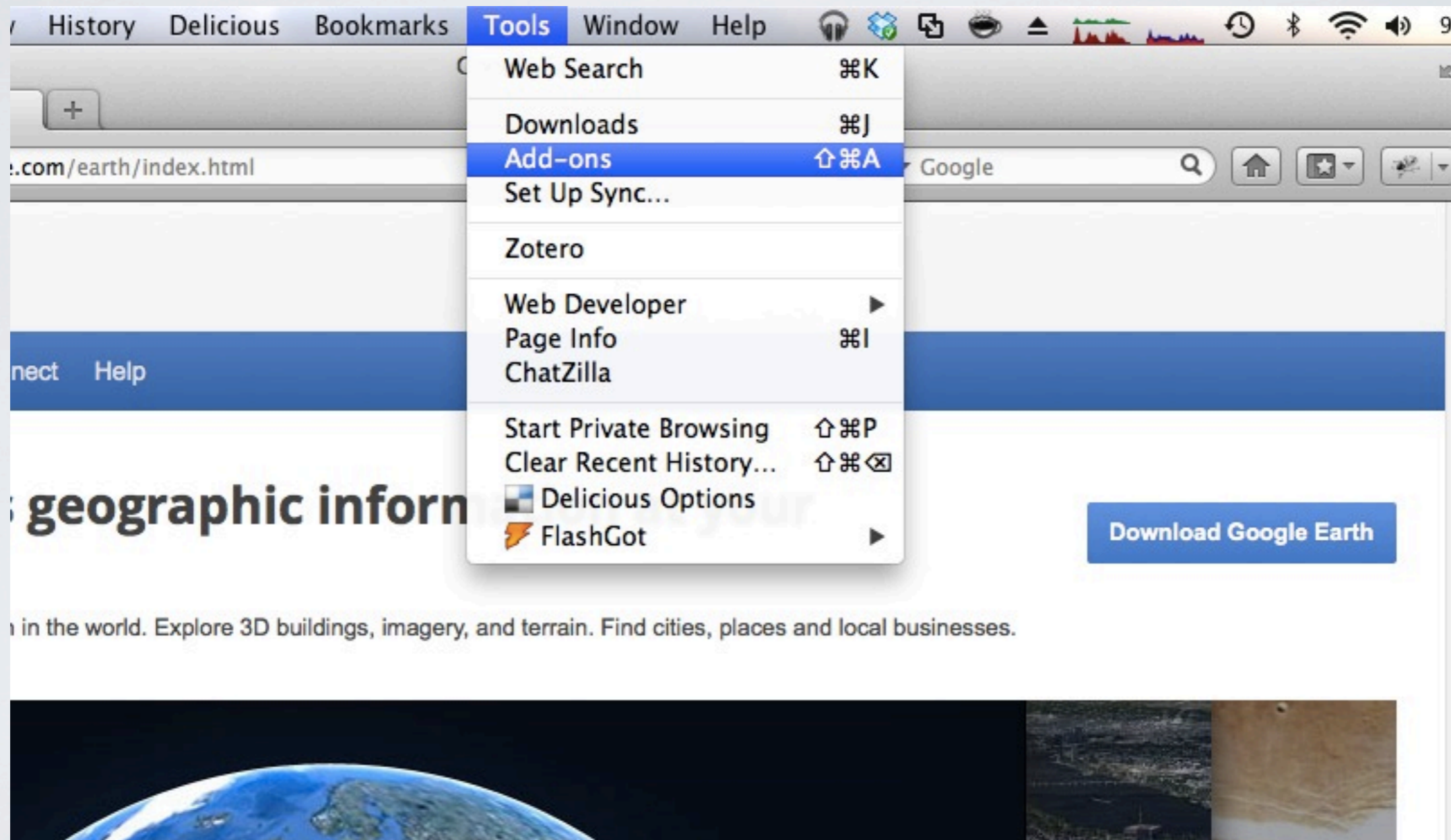
- KeePassX

- Encryption - SSL & SSH

SECURITY

INTERNET RELAY CHAT

ChatZilla in Firefox



The image shows a screenshot of a web browser window displaying the Google Earth website. The browser's menu bar includes 'Edit', 'View', 'History', 'Delicious', 'Bookmarks', 'Tools', 'Window', and 'Help'. The 'Tools' menu is open, listing various options: 'Web Search' (⌘K), 'Downloads' (⌘J), 'Add-ons' (⇧⌘A), 'Set Up Sync...', 'Zotero', 'Web Developer' (with a right-pointing arrow), 'Page Info' (⌘I), 'ChatZilla' (highlighted in blue), 'Start Private Browsing' (⇧⌘P), 'Clear Recent History...' (⇧⌘⌘), 'Delicious Options', and 'FlashGot' (with a right-pointing arrow). The browser's address bar shows 'www.google.com/earth/index.html'. The website content includes the word 'Earth' in a large font, a navigation bar with 'Learn', 'Connect', and 'Help', and a main heading 'world's geographic inform'. A blue button labeled 'Download Google Earth' is visible on the right. The bottom of the page features a partial image of the Earth from space.

Known Networks 12 ChatZilla 0.9.89 Connected Networks 0

[HELLO] Welcome to ChatZilla...
Below is a short selection of information to help you get started using ChatZilla.

[HELLO] Help is available from many places:

- `/commands` lists all the built-in commands in ChatZilla. Use `/help <command-name>` to get help on individual commands.
- The IRC Help website <http://www.irchelp.org/> provides introductory material for new IRC users.
- The ChatZilla website <http://chatzilla.hacksrus.com/> provides more information about IRC and ChatZilla, including the ChatZilla FAQ <http://chatzilla.hacksrus.com/faq>, which answers many common questions about using ChatZilla.

[INFO] Available networks are [dalnet, efnet, freenode, hispano, ircnet, moznnet, quakenet, serenia, slashnet, solidirc, undernet, webbnnet].

client

schwehr_ /attach researchtools.ccom.nh

URL <irc://researchtools.ccom.nh/> Connected Lag 1.01 seconds

```
[INFO] Connecting to irc://researchtools.ccom.nh/ (irc://researchtools.ccom.nh/)... [Cancel]
=== Welcome to the Internet Relay Network schwehr_!~chatzill@192.168.12.130
=== Your host is irc.debian.org, running version ngircd-15 (i486/pc/linux-gnu)
=== This server has been started Thu Oct 11 2012 at 11:00:18 (EDT)
=== irc.debian.org ngircd-15 aios biIklmnoPstv
=== RFC2812 CASEMAPPING=ascii PREFIX=(ov)@+ CHANTYPES=#&+
CHANMODES=bI,k,l,imnPst CHANLIMIT=#&+:10 are supported on this server
=== CHANNELLEN=50 NICKLEN=9 TOPICLEN=490 AWAYLEN=127 KICKLEN=400
PENALTY are supported on this server
=== There are 1 users and 0 services on 1 servers
=== 1 channels formed
=== I have 1 users, 0 services and 0 servers
=== 1 Current local users: 1, Max: 1
=== 1 Current global users: 1, Max: 1
=== - irc.debian.org message of the day
=== - *****
=== - *           H   E   L   L   O           *
=== - *   Welcome on our new IRC server, running on: *
=== - *   Debian GNU/Linux (www.debian.org) *
=== - *****
--- End of MOTD command
==> User mode for schwehr_ is now +i
```

client researchtools.ccom.nh

schwehr_

●schwehr_

URL <irc://researchtools.com.nh/researchtools> Mode **no mode** Users **1,1@,0%,0+**
 Topic <none>

#researchtools

--> YOU (schwehr_) have joined #researchtools
 <schwehr_> hi all

client researchtools.com.nh #researchtools

@schwehr_

JABREF FOR PAPER REFERENCES

The screenshot shows the JabRef application window. The main window displays a list of entries with columns for #, Entry type, Author, Title, Year, Journal, Owner, Timestamp, and Bibtextkey. Entry 18 is selected, and its details are shown in a panel below the list.

#	Entryty...	Author	Title	Year	Journal	Owner	Timestamp	Bibtexkey
1	Techre...	Mayer and CCOM/JHC	2010 UNH/NOAA Joint Hydrographic Center...	2011		schwehr	2011.12...	mayer2011
2	Inproc...	Schwehr	Vessel Tracking Using the Automatic Identifi...	2011		schwehr	2011.04...	Schwehr2...
3	Article	Schwehr	Response Logistics: ERMA and GeoPlatform	2011	Alaska M...	schwehr	2011.01...	Schwehr2...
4	Misc	Schwehr	Kurt's Weblog, Electronic Work Log	2011				schwehr
5	Misc	Schwehr	ais-areanotice-py: reference implementatio...	2011		schwehr	2011.04...	Schwehr2...
6	Inproc...	Schwehr	4D Non-bathy Data in Support of Hydrogra...	2011		schwehr	2011.04...	Schwehr2...
7	Inproc...	Schwehr	Global Coastal and Marine Spatial Planning (...)	2011		schwehr	2011.09...	Schwehr2...
8	Article	Alexander	New Standards for Providing Meteorological...	2010	Internatio...	schwehr	2010.09...	alexande...
9	Article	Alexander	Establishing an IALA AIS Binary Message Reg...	2010	17th IALA...	schwehr	2010.09...	alexande...
10	Article	IMO	Guidance on the Use of AIS Application-Spec...	2010	IMO	schwehr	2010.09...	imo2010a
11	Article	IMO	Guidance for the Presentation and Display o...	2010	IMO	schwehr	2010.09...	imo2010b
12	Techre...	Mayer and the JHC	UNH/NOAA Joint Hydrographic Center, 200...	2010		schwehr	2010.09...	mayer2010
13	Misc	Schwehr	noadata-py	2010				noadata...
14	Article	Schwehr	Interplanetary Observation: Mars Rover Platf...	2010	2010 Oc...	schwehr	2010.09...	schwehr2...
15	Techre...	Schwehr	Environmental Response Management Appli...	2010		schwehr	2011.01...	schwehr2...
16	Article	Schwehr	Bathymtric Attributed Grids (BAGs): Discover...	2010	Canadian...	schwehr	2010.09...	schwehr2...
17	Techre...	Alexander and Schwehr	Concept: IALA AIS Binary Messages Web site...	2009		schwehr	2010.09...	alexande...
18	Article	Calder and Schwehr	Traffic Analysis for the Calibration of Risk As...	2009	US Hydro	schwehr	2010.09...	calder2009
19	Techre...	Center	Opening the Arctic Seas: Envisioning Disaste...	2009		schwehr	2010.09...	crrc2009
20	Article	Group	Revision of the Guidance on the Application...	2009	IMO NAV...	schwehr	2010.09...	nav55
21	Article	Kurt D. Schwehr	Discovery of Marine Datasets and Geospatia...	2009	Fall AGU	schwehr	2010.09...	schwehr2...
22	Article	Maver and the IHC	2008 UNH/NOAA Joint Hydrographic Center	2009	CCOM Re	schwehr	2010.09	maver2009









































Article (calder2009)
 Calder, B. & Schwehr, K.
 Traffic Analysis for the Calibration of Risk Assessment Methods
US Hydro, 2009

Abstract: In order to provide some measure of the uncertainty inherent in the sorts of charting data that are provided to the end-user, we have previously proposed risk models that measure the magnitude of the uncertainty for a ship operating in a particular area. Calibration of these models is essential, but the complexity of the models means that we require detailed information on the sorts of ships, traffic patterns and density within the model area to make a reliable assessment. In theory, the ais system should provide this information for a suitably instrumented area. We consider the problem of converting, filtering and analysing the raw ais traffic to provide statistical characterizations of the traffic in a particular area, and illustrate the method with data from 2008-10-01 through 2008-11-30 around Norfolk, VA. We show that it is possible to automatically construct aggregate statistical characteristics of the port, resulting in distributions of transit location, termination and duration by vessel category, as well as type of traffic, physical dimensions, and intensity of activity. We also observe that although 60 days give us sufficient data for our immediate purposes, a large proportion of it—up to 52% by message volume—must be considered dubious due to difficulties in configuration, maintenance and operation of ais transceivers.

Status: Opened database '/Users/schwehr/projects/doc/papers-www/schwehr.bib' with 103 entries.

PASTERS

<http://pastebin.com/u/goatbar>

NAME / TITLE	ADDED	EXPIRES	HITS	SYNTAX	-
 savehist for emacs	Sep 17th, 12	Never	18	Lisp	 
 successfully building mbsystem on mac osx 10.8	Sep 12th, 12	Never	17	None	 
 bash prompt and logging of bash history with path/...	Sep 10th, 12	Never	13	Bash	 
 using git-py to list remote tags	Sep 10th, 12	Never	7	None	 
 fink on 10.8 - libdap9 build failure	Aug 20th, 12	Never	15	None	 
 matplotlib-basemap mac osx build failure	Jul 29th, 12	Never	14	None	 
 gdal change between 1.7.3 and 1.8.1	Jul 18th, 12	Never	8	None	 
 GDAL bounding box differences in NAD27 - diff in tif?	Jul 18th, 12	Never	23	None	 
 causes ipython 0.13 trouble	Jul 8th, 12	Never	15	Python	 
 debianutils trouble in fink	Jun 28th, 12	Never	40	None	 
 sample python paste	Jun 23rd, 12	Never	21	Python	 
 start to a colored bash prompt	May 4th, 12	Never	33	Python	 
 Xah's parsing challenge - answered in python	Apr 23rd, 12	Never	71	Python	 
 Untitled	Apr 20th, 12	Never	21	Python	 

SSH / PUTTY / COMMANDLINE

```
Terminal Shell Edit View Window Help
schwehr — schwehr@researchtools: ~/wx — ssh — 124x24

total 4
drwxr-xr-x 3 schwehr domain users 4096 2011-09-06 06:28 wx
schwehr@researchtools:~$ cd wx
schwehr@researchtools:~/wx$ ls -l
total 163844
-rw-r--r-- 1 schwehr domain users 55808963 2011-09-06 06:05 ccom-airmar-2011-08-28
-rw-r--r-- 1 schwehr domain users 55979878 2011-09-06 06:05 ccom-airmar-2011-08-29
-rw-r--r-- 1 schwehr domain users 55977976 2011-09-06 06:05 ccom-airmar-2011-08-30
drwxr-xr-x 7 schwehr domain users 4096 2011-09-06 06:24 nmeadec
schwehr@researchtools:~/wx$ head -5 ccom-airmar-2011-08-28
# START LOGGING UTC seconds since the epoch: 1314489600.19
# SPEED:      4800
# PORT:       /dev/ttyS0
# TIMEOUT:    300.0
# STATIONID:  ccom-airmar
schwehr@researchtools:~/wx$ tail -5 ccom-airmar-2011-08-28
$WIMWV,144.2,T,2.1,N,A*25,rccom-airmar,1314575999.9
$WIMWV,143.9,R,2.1,N,A*2F,rccom-airmar,1314575999.96
$HCHDT,25.6,T*18,rccom-airmar,1314576000.23
# STOP LOGGING UTC seconds since the epoch: 1314576000.23
# Log roll over
schwehr@researchtools:~/wx$ grep WIMWV ccom* | wc -l
777544
schwehr@researchtools:~/wx$
```