



Cyberinfrastructure and Scientific Portals at Notre Dame

Jarek Nabrzyski
Center for Research Computing
naber@nd.edu, <http://crc.nd.edu>



Center for Research Computing

- Established in 2006, HPC operations and user support.
- I arrived in 2009 to see that 7 staff members run HPC operations (~20 small clusters in ~20+ small cabinets/closets on campus, 250 users total)
- My goal is to build a new model for the center
 - Grow computational science
 - Grow cyberinfrastructure development



Mission

The University of Notre Dame's Center for Research Computing (CRC) engages in computational science, fosters multidisciplinary research and provides advanced computational tools and services. The CRC works to facilitate discoveries across science, engineering, arts, humanities, social sciences, business and other disciplines.



Vision

To become an internationally recognized multidisciplinary research computing center based upon our reputation for facilitating and accelerating discovery through effective and novel applications of cyberinfrastructure.



Jarek's thoughts (May-August 2009):

- “Nice vision, but how we get there?”
- “What should we do first?”
- “Users should tell us what they need...”
- “HPC works fine, so let’s focus on CI Development...”
- “We need PORTALS and other collaborative environments”
- “We need good user support, and good, straight resource usage policies”
- “We need CI and HPC teams working together”
- “How do we fund all these with very limited resources?”
- “What is available out there?”
- And so on...



Workflow

Take the risk and hire people first -> train people
-> generate / bring projects -> assign people to
projects and focus on getting more projects and
more people -> etc...

-> if not successful then exit, i.e. quit 😊

Fortunately, we had many projects, mostly
science gateway projects of various kinds and
difficulty.



Cyberinfrastructure Group

- 15 programmers (and need more...)
- 7 computational scientists (and need more...)
- ICE group (Interactive and Collaborative Environments) and Computational Frameworks Group
- ICE heavily involved in portal/science gateways development
- ~30 different science gateways projects of various size since 2010



Old times ... (oh, I miss them)

- GridSphere Portlet Framework (abandoned, although used broadly worldwide)
- VineToolkit (still exists)
 - Tools (portal APIs) that connected users to bunch of grid / distributed infrastructures, including Globus, Condor, national grid infrastructures, etc.
- No CMS though
- LifeRay was a strong competitor (still doing well).



Today...

- ‘War’ between Joomla!, Drupal, Plone, WordPress... you name it...
- Java, vs. Django vs. Ruby, etc.
- Users very often have their pilot projects developed in “something”
- Shall we let users decide? Shall we impose a solution/technology on them?
- How do we build teams? Do we need to know all the web technologies or use just one or two? Is it a good investment?



Peace Accords Matrix

- The Peace Accords Matrix (PAM) project serves as a good example of how a Web technology can bridge the gap between researchers and their data. Here, the Kroc Institute for International Peace Studies engaged the CRC's ICE team to rapidly build a replacement for what was a malfunctioning and poorly designed Web/database system.
- Although the original system required more than a year to build, the ICE team had one month to complete this project--nothing from the original project could be reused.

Peace Accords Matrix

Compare and analyze peace agreements worldwide Peace Accord

People's Republic of China

zoom

About PAM

The Peace Accords Matrix is a unique source of comparable data on all comprehensive peace agreements that have been signed since 1989. [More >>](#)

Using this site

1. Click on pale yellow areas in the map to learn about specific conflicts and access peace accords.
2. Go to [this page](#) to compare accords by location (region or country) or by topic.

UNIVERSITY OF NOTRE DAME

© 2008. Kroc Institute for International Peace Studies, University of Notre Dame
100 Hesburgh Center for International Studies • Notre Dame, IN 46556-5677 USA • (574)631-6970



Varieties of Democracy (VoD)

Varieties of Democracy aims to produce better indicators of Democracy

Who: [fifteen social scientists on three continents who work with hundreds of country experts and a truly global International Advisory Board.](#)

The screenshot shows the V-Dem website interface. At the top, there's a navigation bar with language options (English, Français, Español) and a 'Log in' button. Below that is a search bar. The main header features the V-Dem logo and the text 'VARIETIES OF DEMOCRACY'. A secondary navigation bar includes links for Home, ABOUT, CONTACT, ADVISORY BOARD, CODING TUTORIAL, BEGIN or RESUME CODING, and DATA. A third navigation bar lists VISUALIZATIONS, REFERENCE, NEWS, and English. The main content area has a large image of hands holding a ballot with the caption 'Training voters how to vote.' To the right of this image is a 'Country Experts' box with a 'Log in' button and a search bar. Below the image is a text block titled 'Measuring Degrees and Types of Democracy' which describes the project's goal. Further down, there's a list of bullet points: 'Seven Principles', 'Dozens of Components', and 'Hundreds of Indicators'. To the right of this list is a world map with several countries highlighted in blue and red. Below the map is a text block stating 'Pilot Study 2011 Planned for 2012' and another paragraph about the project's scope from 1900 to the present.

VoD Home Page: <http://v-dem.net>



Varieties of Democracy (VoD)

- Objectives
 - Survey, measure, and visualize degrees and types of democracy around the world
 - Support a global community of researchers and survey coders (500 to 600 registered users; 100 visitors a day)
 - CMS capabilities including strong workflow for content management
 - Small, inexpensive server footprint
- Technology Choice
 - Plone (version 4.1)
 - PostgreSQL (version 8.4; currently storing 1.2 million rows)
 - HighCharts (Javascript visualization library)



Varieties of Democracy (VoD)

- Why Plone?
 - Open source (GPL)
 - Python-based (CRC is largely a Python shop!)
 - Mature (first release in 2001)
 - Deployment base in thousands (roughly 2,283 sites, according to Plone.org); government, academic, and private sector
 - Robust CMS and workflow out-of-the-box
 - Extensible/customizable through Zope



Varieties of Democracy (VoD)

- Plone does deliver on its promises, but....
 - Zope (Python-based Web application server) is Byzantine and very complex; **significant** learning curve
 - Zope is its own universe; its approach is unlike any other Python Web environment
 - Development workflow (e.g., development → QA → production) is made more difficult with Zope, though not impossible



Varieties of Democracy (VoD)

Elections (Sweden)

1. Read Question. 2. Click & drag to select years. 3. Apply or Edit specific dates, if desired. 4. Apply or type response. 5. Rate Confidence. 6. Submit. 7. Repeat for remaining years. 8. Click "Next".

actions in all selected years.

(v2eldonate) Are there disclosure requirements for donations to national election campaigns?

Min: 0 Max: 4

(0) No. There are no disclosure requirements

(1) Not really. There are some, possibly partial, disclosure requirements in place but they are not observed or enforced most of the time.

(2) Ambiguous. There are disclosure requirements in place, but unclear to what extent they are observed or enforced.

(3) Mostly. The disclosure requirements may not be fully comprehensive (some donations not covered), but most existing arrangements are observed and enforced.

(4) Yes. There are comprehensive requirements and they are

Confidence: 0%

I have no idea at all. [Any scores accompanied by a confidence level of zero will be treated as missing data]

	00	01	02	03	04	05	06	07	08	09
1900	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909
1910	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919
1920	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929
1930	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939
1940	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949
1950	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959
1960	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
1970	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
1980	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
1990	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
2000	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
2010	2010	2011	2012	2013						

Click and drag to select a range of years, Ctrl-click (Command-click for Mac) to unselect.

Specific Dates:

New Date:

Legend

- ▲: At least one date in this cell does not have an answer.
- ▲: All dates in this cell have an answer, but at least one does not have a confidence rating.
- ✔: All dates in this cell have both an answer and a confidence rating.

Jump To Question: v2eldonate

Example Survey Dialog



Cyber-Eye

Home full BB set Messages Notifications Add widget Config

Bigboard Overlays

room1 Overlays

NOAA Buoy: 100 Show Description

NOAA Ridge Baster: 7.4 Show Description

Admin contour close: 1.1 Show Description

Bigboard Map

room1

Bigboard Annotations

room1 Annotations

Navigate

Point

Line

Shape

Select

Delete Selected

Info for Selected

Next Annotation Data

Kind: Text

Text:

Info For Selected (click to hide)

None selected

Bigboard Chat

room1

test admin - 11:38

This is a chat message admin - 08:53

Bigboard Map

room1

Bigboard Personal Views

room1 Personal Views

USA Go x

Show Description

Hawaii Go x

Show Description

South Bend Go x

Show Description

ND Go x

Show Description

Bigboard Notifications

room1 Notifications

test Go

Show Body



Cyber-Eye Hurricane Situational Awareness Application

- Objectives
 - Platform to provide Situational Awareness with respect to Hurricane events
 - Provide Geospatial modeling and information
 - Provide a modular environment where custom Web 2.0 apps could be created
 - Small, inexpensive server footprint
- Technology Choice
 - GeoAnalytics (<http://geoanalytics.renci.org/>)
 - Django



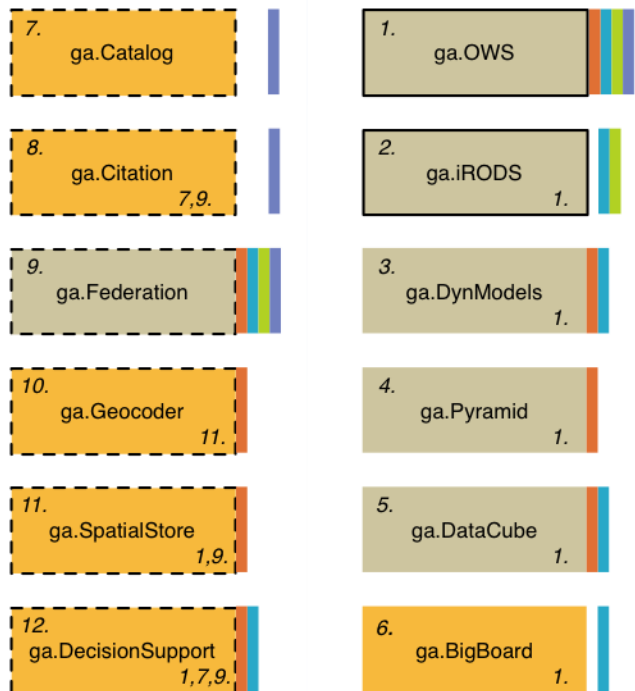
Cyber-Eye

- Why GeoAnalytics?
 - Modular, lightweight framework for GIS
 - Provides Python and Django integration
 - Integrates mature tools (PostGIS, GeoDjango, OpenLayers, Grass)
 - Provides attractive “BigBoard” Web 2.0 based GIS collaborative application



Geoanalytics (collaboration with RENCI)

Web services & applications



Proposed

Existing

Data services



Celery Task Broker

Celery worker per compute resource with GRASS, R, Fortran, Custom models.

Compute services



SPACES - Niche Modeling Framework

Spatial Portal for Analysis of Change in Environment on Species



SPACES

- A **Modeling Framework** to serve the niche modeling community by providing a dozen or so Species Distribution Model (SDM) algorithms alongside a **vast amount of formatted spatial data available through user selection and integrated with projected climate scenarios, projected land-cover/land-use, and other non-climate data to capture all the attributes pertaining to the species' realized niche.**
- Utilizes open source software in combination with spatial and species information, remote sensing technologies, data- and knowledge-management tools, and other cyberinfrastructure components.
- Provides the means to compare, contrast, and analyze output maps pertaining to different SDM algorithms using a raster output calculator, thereby allowing the comparison of the spatial extent of species' realized niches across multiple SDMs.



Features

- Enables biologists to take advantage of massive quantities of spatial data while freeing them from the time-consuming, laborious, and error-prone conversion process.
- Makes available many otherwise-inaccessible collections of spatial information.
- Avoids duplicate storage of massive spatial datasets.
- Provides a virtual high-performance computing facility to people from developing countries.
- Builds documentation that is not currently available.
- Creates and manages a platform for a virtual community.
- Makes spatial data accessible in a format that is standardized with respect to spatial extent and resolution.
- Permits the direct comparison of model results with respect to the spatial extents.

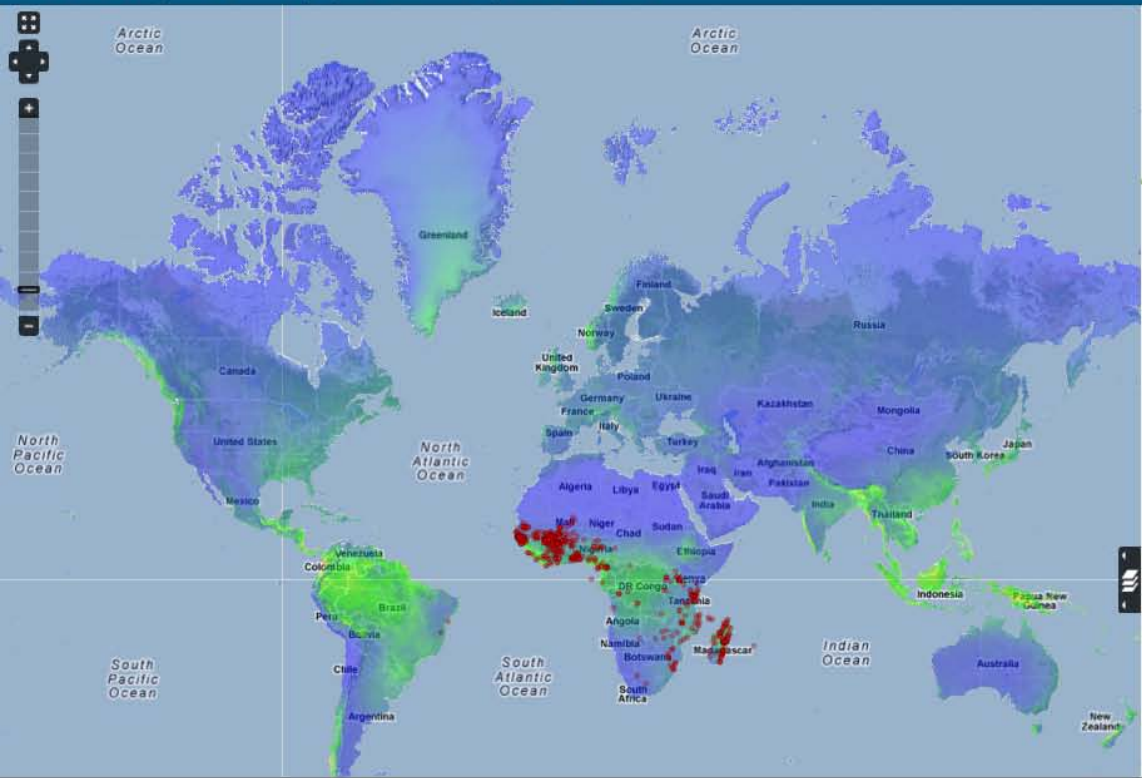


SPACES

Spatial Portal for Analysis of Climatic Effects on Species

SPACES experiment

New SPACES Experiment My Experiments Experiment Calculator



Experiment

Name: Public
Edit Description

Data **Algorithms**

Species

Submit Experiment

Species Name: (Source: GBIF)
or upload a species occurrence file

Mask

Mask:

Layers

Layer Set:

Select All | Select None

- Annual Mean Temperature
- Annual Precipitation
- Digital Elevation Map
- Isothermality
- Landcover Map
- Max Temperature of Warmest Month

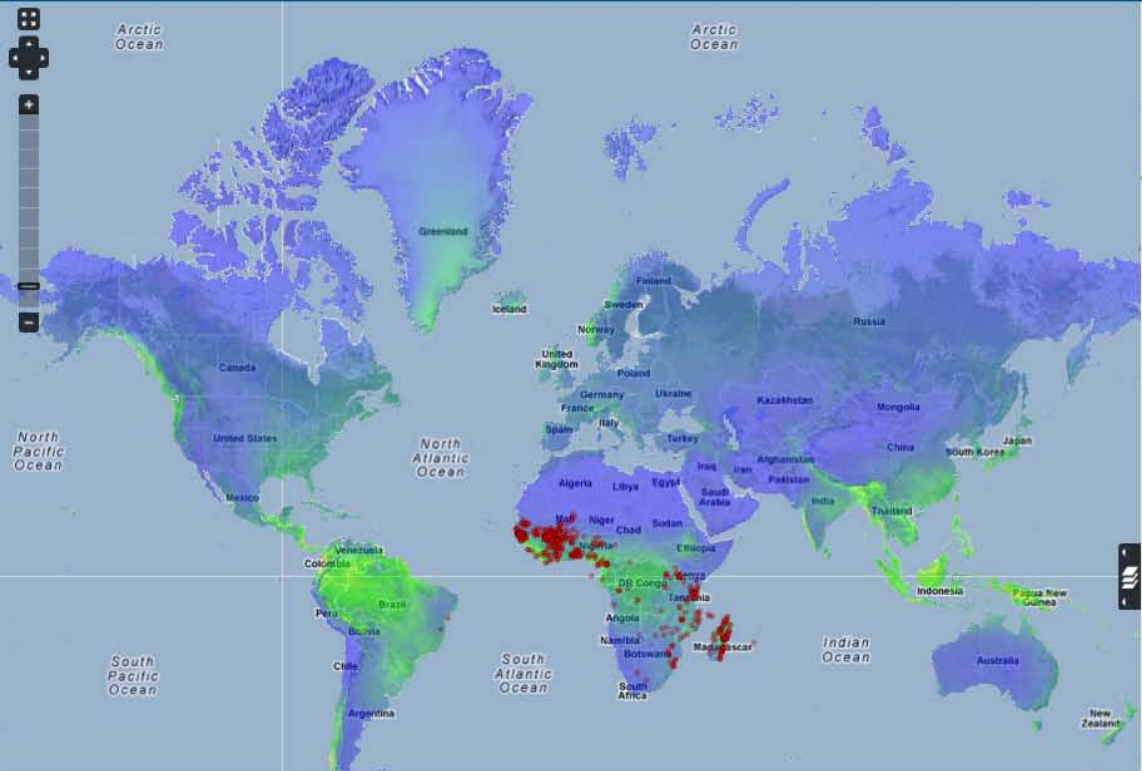
Species

Spatial Layers



SPACES
Spatial Portal for Analysis of Climatic Effects on Species

New SPACES Experiment My Experiments Experiment Calculator



Experiment
Name: Public
Edit Description

Data **Algorithms**

Submit Experiment

Algorithms
(Biomod) Surface Range

Add All | Remove All

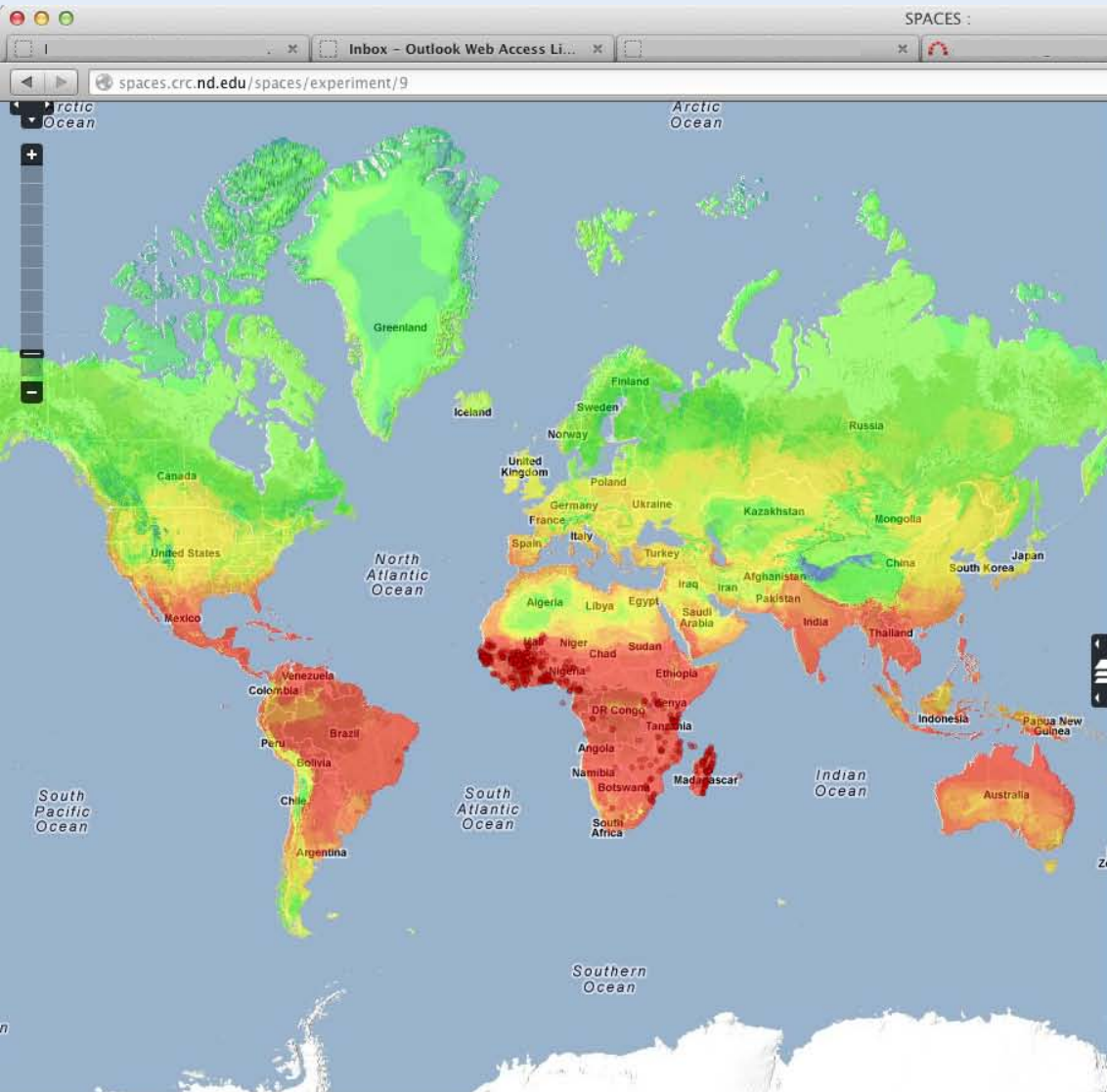
Reset All Algorithm Parameters

- (Openmodeller) Artificial Neural Network
- (Openmodeller) Bioclim
- (Openmodeller) GARP (single run) - DesktopGARP implementation
- (Openmodeller) GARP with best subsets - DesktopGARP implementation
- (Openmodeller) ENFA (Ecological-Niche Factor Analysis)
- (Openmodeller) Environmental Distance
- (Openmodeller) Envelope Score

Select SDM algorithms



- (Openmodeller) Envelope Score
- (Openmodeller) GARP (single run) - new openModeller implementation
- (Openmodeller) GARP with Best Subsets - new openModeller implementation
- (Openmodeller) Maximum Entropy
- (Openmodeller) Niche Mosaic
- (Openmodeller) Random Forests
- (Openmodeller) SVM (Support Vector Machines)
- (Dismo) Bioclim
- (Dismo) Maxent
- (Biomod) Artificial Neural Network
- (Biomod) Classification Tree Analysis
- (Biomod) Flexible Discriminant Analysis
- (Biomod) Generalized Additive Model
- (Biomod) Generalized Boosting Model
- (Biomod) Generalized Linear Model
- (Biomod) Multiple Adaptive Regression Splines
- (Biomod) Maximum Entropy
- (Biomod) Random Forest
- (Biomod) Surface Range Envelop



SPACES :
 spaces.crc.nd.edu/spaces/experiment/9

Edit Description

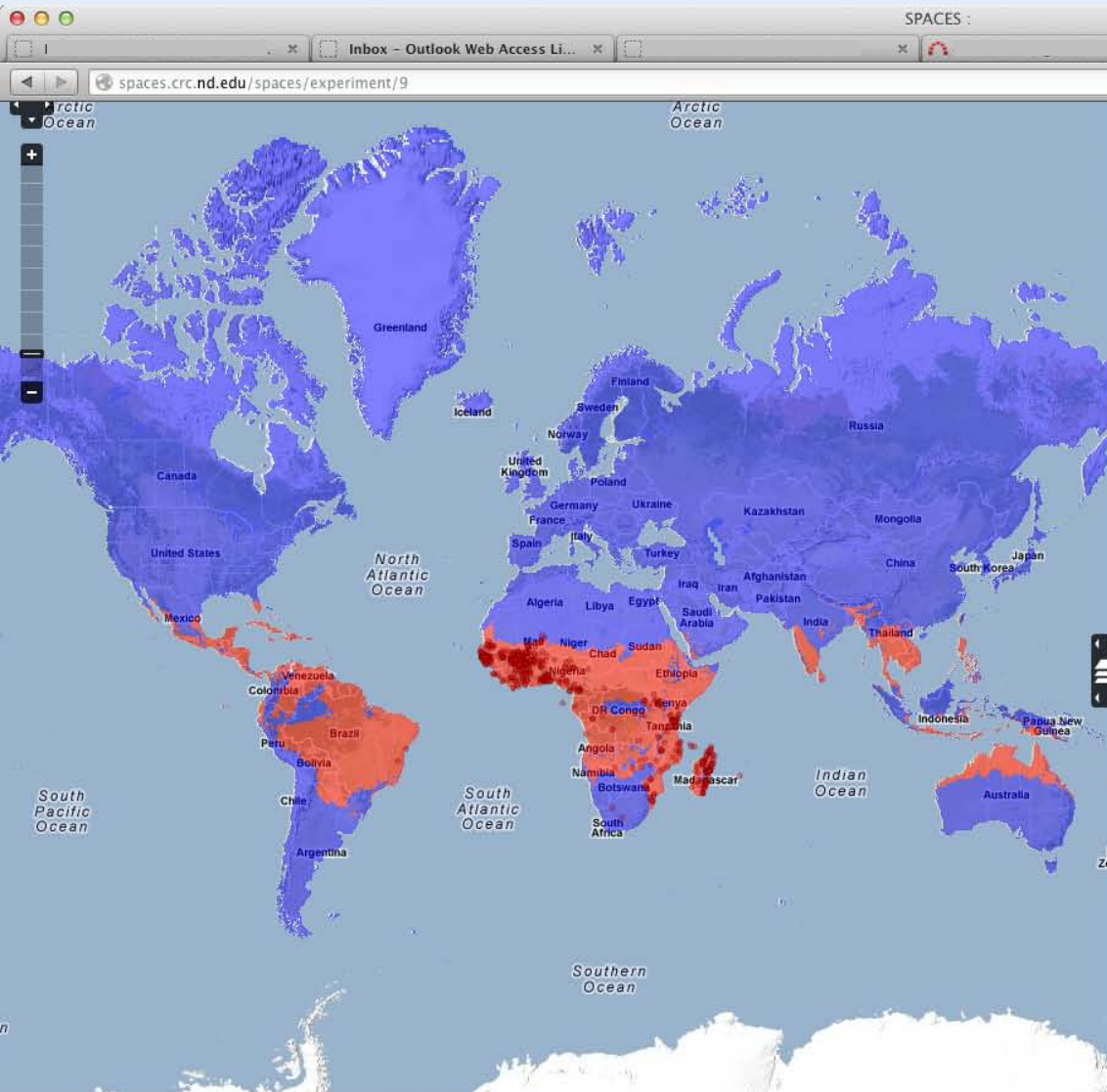
Data **Algorithms**

Algorithms

(Openmodeller) SVM (Su...
 Add All | Remove All

Reset All Algorithm Parameters

- (Openmodeller) Artificial Neural Network
- (Openmodeller) Bioclim
- (Openmodeller) GARP (single run) - DesktopGARP implementation
- (Openmodeller) GARP with best subsets - DesktopGARP implementation
- (Openmodeller) ENFA (Ecological-Niche Factor Analysis)
- (Openmodeller) Environmental Distance
- (Openmodeller) Envelope Score
- (Openmodeller) GARP (single run) - new openModeller implementation
- (Openmodeller) GARP with Best Subsets - new openModeller implementation
- (Openmodeller) Maximum Entropy



SPACES :
 spaces.crc.nd.edu/spaces/experiment/9

Edit Description

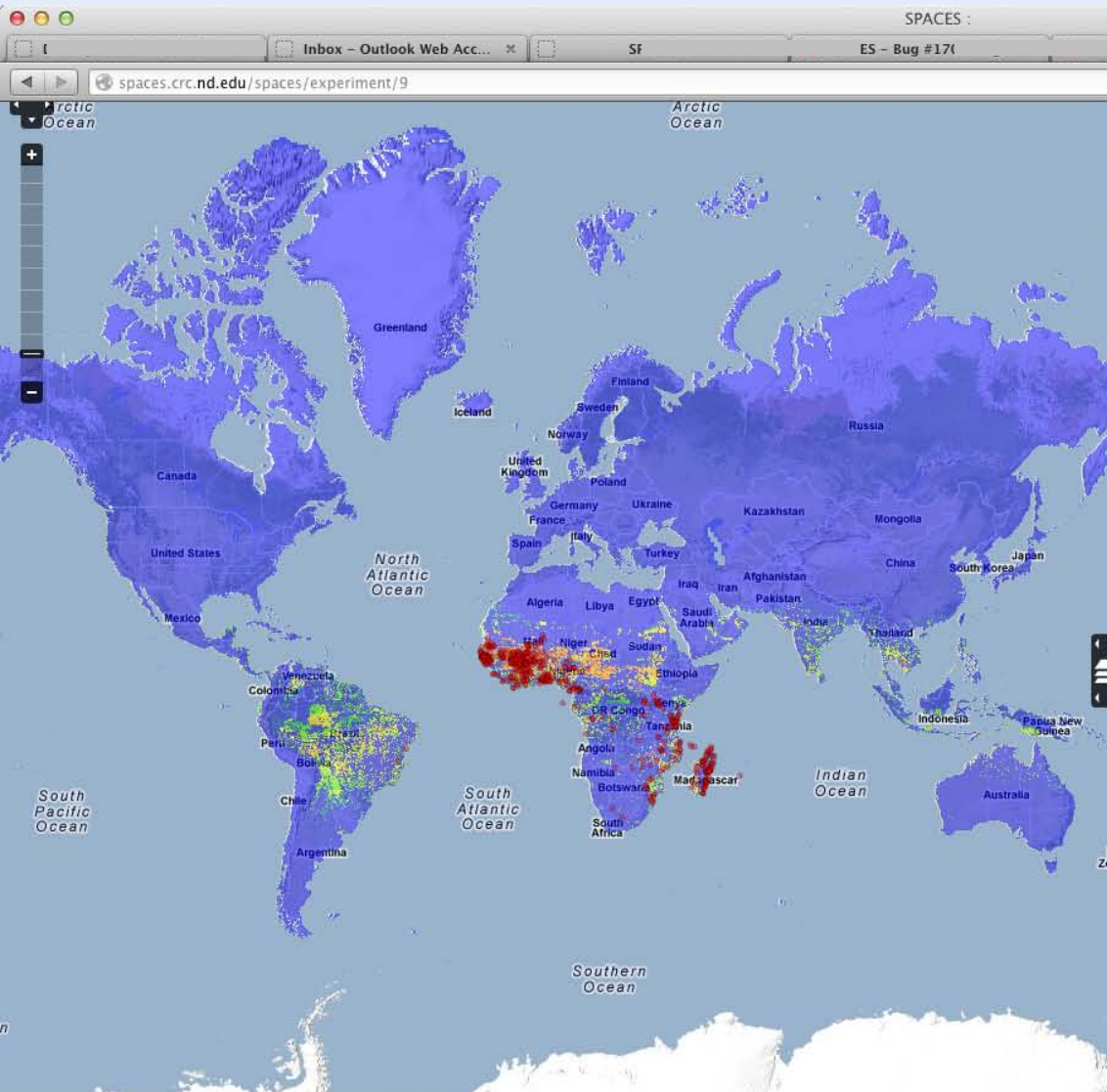
Data **Algorithms**

Algorithms

(Openmodeller) SVM (Su...
 Add All | Remove All

Reset All Algorithm Parameters

- (Openmodeller) Artificial Neural Network
- (Openmodeller) Bioclim
- (Openmodeller) GARP (single run) - DesktopGARP implementation
- (Openmodeller) GARP with best subsets - DesktopGARP implementation
- (Openmodeller) ENFA (Ecological-Niche Factor Analysis)
- (Openmodeller) Environmental Distance
- (Openmodeller) Envelope Score
- (Openmodeller) GARP (single run) - new openModeller implementation
- (Openmodeller) GARP with Best Subsets - new openModeller implementation
- (Openmodeller) Maximum Entropy



SPACES : anopheles gambiae

Edit Description

Data Algorithms

Algorithms

(Openmodeller) SVM (Su...
 Add All | Remove All

Reset All Algorithm Parameters

- (Openmodeller) Artificial Neural Network
- (Openmodeller) Bioclim
- (Openmodeller) GARP (single run) - DesktopGARP implementation
- (Openmodeller) GARP with best subsets - DesktopGARP implementation
- (Openmodeller) ENFA (Ecological-Niche Factor Analysis)
- (Openmodeller) Environmental Distance
- (Openmodeller) Envelope Score
- (Openmodeller) GARP (single run) - new openModeller implementation
- (Openmodeller) GARP with Best Subsets - new openModeller implementation
- (Openmodeller) Maximum Entropy



VectorBase

Homepage

Anopheles

Aedes

Ixodes

Culex

Pediculus

Rhodnius

Glossina

Get VectorBase Help

Sequence Data

Expression Data

Images

Population Data

IRbase

Documents

More...

Tools

Get Data

Forum

Search

User

Welcome To VectorBase!

An NIAID Bioinformatics Resource Center for Invertebrate Vectors of Human Pathogens.



VectorBase Services:

Organisms »

- An. gambiae, Ae. aegypti, I. scapularis, C. quinquefasciatus, P. humanus, R. prolixus, G. morsitans, Additional Organisms, Summary of VectorBase Species

Anopheles Genomes Cluster »

- Project Information

Data Sections »

- Sequence Data, Gene Expression Data, Images, Population Data, IRbase, Data Release Guidelines

Tools »

- BLAST, ClustalW, HMMER, Controlled Vocabulary Search, Manual Annotation Submission Tool, Natdiv-Rest, Phenovis, GDAV, Publication Submission

Retrieve Data »

- Download Data, BioMart

VectorBase Documentation »

- Help Wiki, FAQ, BRC Information, Mailing Lists, Tutorials, Scientific Working Group, How to cite VectorBase

Additional Resources »

- Links, VectorBase Publications, Genome White Papers

Recent News:

- Aug 20th, 2012:** Driving Biological Projects (DBPs) winners of the 2011 call for proposals »
- Jul 03rd, 2012:** Preliminary data set for *Anopheles darlingi* »
- Jun 29th, 2012:** VectorBase Release VB-2012-06 »
- Jun 29th, 2012:** *Anopheles stephensi* released »
- May 16th, 2012:** New *Rhodnius prolixus* gene set »
- May 03rd, 2012:** Update to the *Culex quinquefasciatus* gene set »
- May 03rd, 2012:** *Ixodes scapularis* new gene set »
- May 03rd, 2012:** New *Aedes aegypti* gene set! »
- May 02nd, 2012:** VectorBase Release VB-2012-04 »

VectorBase Quick Search

Genome

VectorBase Communications

- Outreach
- Release
- Publications
- Jobs
- Contact Form

Email us: info@vectorbase.org

VectorBase Newsletter

Summer 2012 - #13

Current Genome Releases

	Anopheles AgamP3.6(PEST), AgamM1(M), AgamS1(S), ADAR1, AsteV1
	Ae. aegypti Liverpool AaegL1.3, April 2012
	C. quinquefasciatus JHB CpipJ1.3, April 2012
	I. scapularis Wikel IscaW1.2, April 2012
	P. humanus USDA PhumU1.2, July 2009
	R. prolixus CDC RproC1, February 2011
	G. morsitans Yale



Welcome to VectorBase!

Initial release of *Anopheles darlingi* at VectorBase

Submitted by vdritsou on Tue, 07/03/2012 - 00:00

The *Anopheles darlingi* genome and annotations have been included in the VB-2012-06 release:

- Genome browser
- Downloads
- BLAST - Choose from Nucleotides or Peptides for *A. darlingi*

The following data are currently available on the genome browser:

[Read more](#) [Log in](#) or [register](#) to post comments

VectorBase Release VB-2012-06

Submitted by vdritsou on Fri, 06/29/2012 - 00:00

VectorBase is pleased to announce the VB-2012-06 release. Highlights of this release include:

- New genomes: *Anopheles darlingi* and *stephensi*
- New expression data for *Anopheles gambiae* and *Aedes aegypti*
- Updated *Anopheles albimanus* transcriptome
- Updated external references fixing known issues with April 2012 VectorBase release

More details are available on the release notes:

http://wiki.vectorbase.org/index.php/VB-2012-06_release

[Read more](#) [Log in](#) or [register](#) to post comments

USER LOGIN

Username *

Password *

[Create new account](#)

[Request new password](#)

POPULAR ORGANISMS



Anopheles gambiae



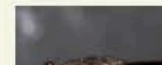
Aedes aegypti



Culex quinquefasciatus



Rhodnius prolixus





Malaria Projects at Notre Dame

The Garki Project

This is a beta release of the Garki website. Please contact us with any comments or suggestions.

[Welcome Page](#)
[About the Project](#)
[About the Data](#)
[Publications](#)
[Access Garki Data](#)

Navigation

- Welcome Page
- About the Project
- About the Data
- Publications
- Access Garki Data

Welcome to The Garki Project

Overview

The Garki Project (view Garki Project PDF, access Garki data) was a study carried out in the Garki District of northern Nigeria in 1969-76 by a joint WHO and Nigerian Government research team. With a focus on the epidemiology and control of malaria in the African savanna, the Project was the most comprehensive study of the effects of a residual spraying campaign and mass drug administration (MDA) on malaria transmission. Project aims were to study the epidemiology of malaria in the lowland rural Sudan savanna (concentrating on the measurement of entomological, parasitological and seroimmunological variables and on their relationships); to measure the effects of spraying with DDT in the savanna; to measure the effects of spraying with DDT in the savanna; to measure the effects of spraying with DDT in the savanna; to measure the effects of spraying with DDT in the savanna.



Malaria Transmission Consortium

[About CRC](#)
[Services](#)
[User Support](#)
[Cyber](#)

Malaria Transmission Consortium

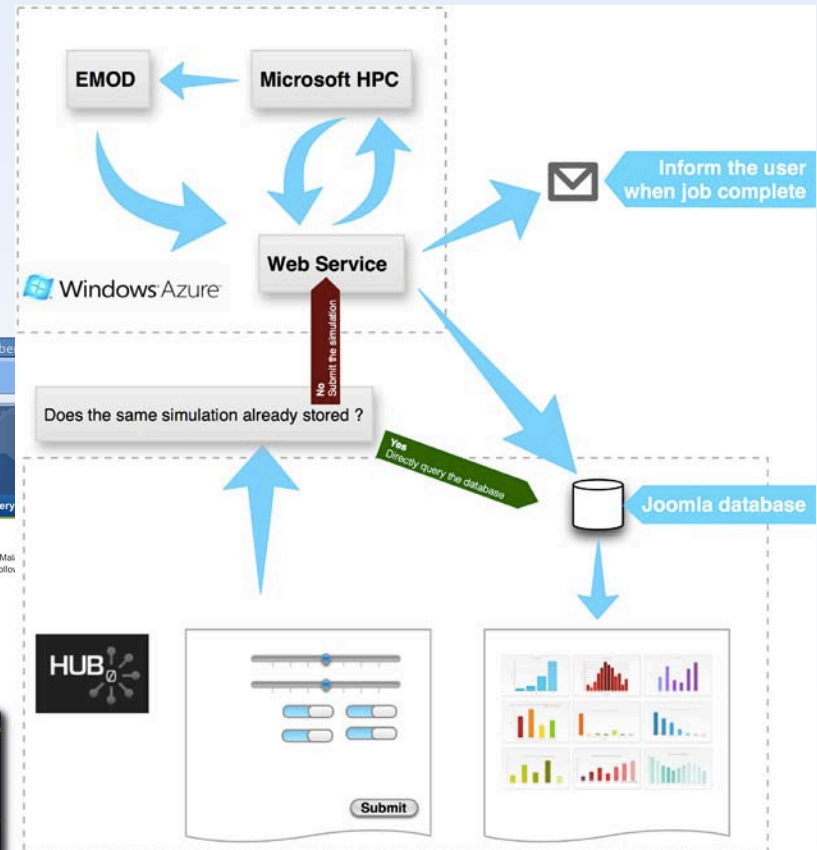
[Welcome](#)
[About the Project](#)
[About the Data](#)
[Data Collection Methods](#)
[Access MTC Data](#)
[Gallery](#)

Welcome to the Malaria Transmission Consortium

Welcome to the MTC portal. This site is a repository for malaria study information conducted by the Malaria Consortium. The current study includes demographic, serological and entomological data from the following countries:

- Indonesia - Purworejo, Lampung and Halmahera
- Kenya Highlands
- Western Kenya
- Tanzania - Dar es Salaam
- Zambia
- Solomon Islands
- Mali







COLLABORATORY for ADAPTATION to CLIMATE CHANGE

[Login](#)[Register](#)

[Home](#) [myCollab](#) [Resources](#) [Members](#) [Explore](#) [About](#) [Support](#)

[Help!](#)

Browse, Search Upload or Comment
on Adaptation Planning Efforts

A clearinghouse of scientific, legal
and regulatory information relevant
to adaptation planning

Welcome to the Adaptation Collaboratory!

This website is a resource for research, education, and collaboration in the area of adaptation and climate change. It is funded by the [National Science Foundation](#) and the [University of Notre Dame](#). Our team at Notre Dame, and our outreach partners at [The Nature Conservancy's Great Lakes Project](#), invite you to share your information needs, ideas, tools, and experiences in climate change adaptation. Click on a task in the slide show or choose an activity from the menus and start adapting!

If you are new to our site, you might start with our [Collaboratory Tutorial](#)

RESOURCES

Keyword or phrase: [Search](#)

Popular Tags: [climate change](#) [adaptation](#) [Policy](#)

[Government](#) [legal](#) [Law](#) [Government - State](#)

[Adaptation Strategies](#) [regulation](#) [Legislation](#)

[state governments](#) [SWAPs](#) [conservation planning](#)

[State Wildlife Action Plans](#) [environmental health](#)

[Comprehensive Wildlife Conservation Strategies](#) [CWCS](#)

[environmental policy](#) [environmental](#) [regulatory](#)

[great lakes](#) [climate science](#) [Government - Federal](#)

[Adaptation Planning](#) [usgcrp](#) [More tags >](#)

[Case Studies, Education and Community, Government Studies &](#)

WHAT'S NEW IN RESOURCES

[Impacts of Climate Change on Biodiversity, Ecosystems, and Ecosystem Services: Technical Input to the 2013 National Climate Assessment](#)
in Publications, Sep 12, 2012

[Global Climate Change Impacts in the United States \(2009\)](#)
in Government Studies & Reports, Sep 05, 2012

[Our Changing Planet. The U.S. Global Change Research Program for Fiscal Year 2012 \(2011\)](#)
in Government Studies & Reports, Sep 05, 2012

[Infosheet. Overview of the U.S. Climate Change Science Program \(2006\)](#)
in Publications, Sep 05, 2012

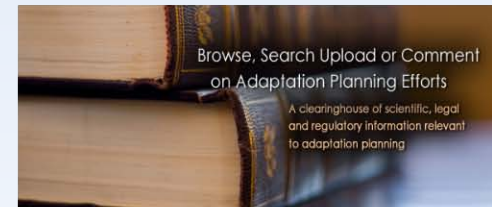
[North American Continental Margins: A Synthesis and Planning Workshop \(2008\)](#)
in Publications, Sep 05, 2012

GET INVOLVED

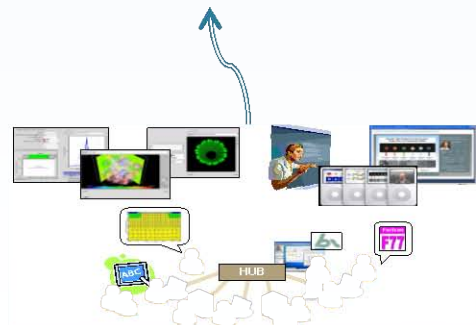
- [Upload Content](#)
Publish your own materials
- [Form working groups](#)
Share things privately with colleagues
- [Take a Poll](#)
Who are you?
- [Give us Feedback](#)
Success story? Suggestions?
- [Contact Us](#)
How to reach us



Collaboratory is a virtual organization relying on cyber infrastructure for data sharing and modeling, shared computational resources, networking, community building, expert advise and to pursue pioneering inter- disciplinary integration and sound policy development.

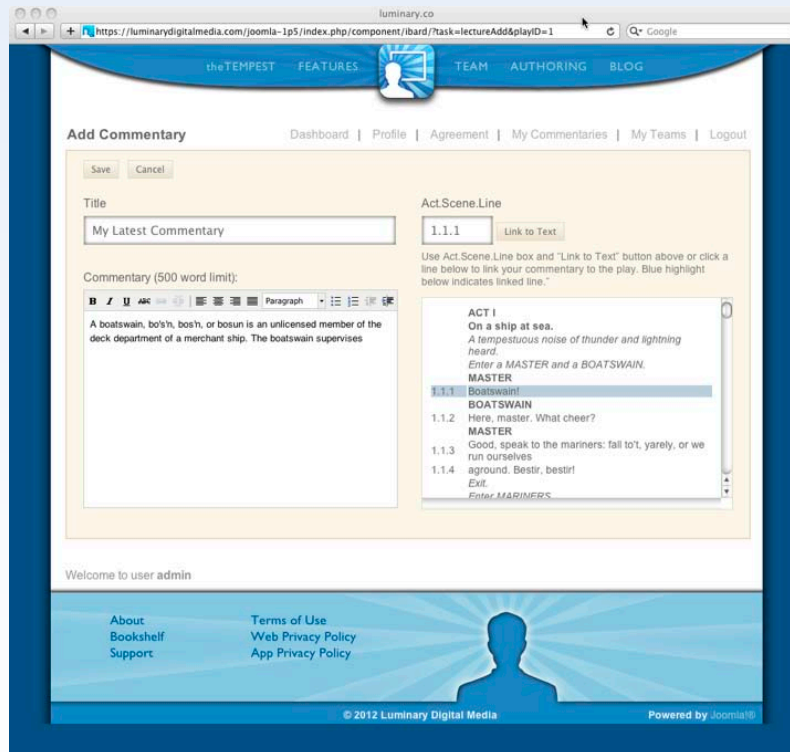


<http://adapt.nd.edu>





Tempest iOS Application



<http://www.luminarydigitalmedia.com>



Tempest iOS Application

- Objectives
 - Interactive, social networking eBook
 - A platform for users to create and share commentary on text
 - Tutorials and multimedia materials for app users
 - Platform for users to create and share
 - Small, inexpensive server footprint
- Technology Choice
 - Joomla!
 - PostgreSQL



Tempest iOS Application

The screenshot displays the Tempest iOS application interface. At the top, there is a navigation bar with a 'Jump to' field set to '5.1.31', a search bar, and a Facebook icon. Below this, a 'The Tempest' header is visible. The main content area is split into two panels. The left panel, titled 'Experts', features a 'Commentary on 5.1.32' by Folger Master Class, which includes a 5.0 star review and a paragraph of text discussing Ariel's role. The right panel, titled 'Actors From the London Stage', contains a video player with a progress bar and a list of text from the play. The text is numbered on the right side, with line 30 highlighted. Below the text, there are character names 'ARIEL' and 'PROSPERO' with their respective lines of dialogue.

Commentary on 5.1.32
 By Folger Master Class
 ☆☆☆☆ Review: 5.0

Ariel makes a wonderful test case for a question that resonates whenever Shakespearean parts are cross-cast: what difference does the sex of an actor make in our understanding of a role and interpretation of the text? The duets between Prof. Garber and Prof. Roach for this exchange between Ariel and Prospero center on Ariel's charged claim to be something other than human but also to recognize what humanity means – "Mine would, sir, were I human." They provide lively evidence for exploring this question.

Background. In Renaissance scientific terms, Ariel is a spirit and therefore categorically not possessed of human functions such as sex or...

Actors From the London Stage

36:44 - 18:43

20
 Hast thou, which art but air, a touch, a feeling
 Of their afflictions, and shall not myself,
 One of their kind, that relish all as sharply
 Passion as they, be kindlier moved than thou art?

25
 Though with their high wrongs I am struck to the quick,
 Yet with my nobler reason 'gainst my fury
 Do I take part. The rarer action is
 In virtue than in vengeance. They being penitent,
 The sole drift of my purpose doth extend
 Not a frown further. Go release them, Ariel.

30
 My charms I'll break, their senses I'll restore,
 And they shall be themselves.

ARIEL I'll fetch them, sir.

Exit.

PROSPERO
 Ye elves of hills, brooks, standing lakes and groves,
 And ye that on the sands with printless foot
 Do chase the ebbing Neptune and do fly him
 When he comes back; you demi-puppets that
 By moonshine do the green sour ringlets make,
 Whereof the ewe not bites; and you whose pastime
 Is to make midnight mushrooms, that rejoice
 To hear the solemn curfew; by whose aid,
 Weak masters though ye be, I have bedimmed
 The noontide sun, called forth the mutinous winds,
 And 'twixt the green sea and the azure vault



Jump to **1.2.332** ? **The Tempest**

Experts Hide

Lecturers

- Elliott Visconsi
- Ellen Mackay
- Brian Walsh
- Jesse Lander
- Kristen Poole
- Harry Berger Jr
- Jennifer Kidd
- Dale Rapley
- Alexander Huang
- Brian Cummings
- Folger Master Class

unexpectedly tells Ariel that he needs him for another trick. "I must /

By Harry Berger Jr

Commentary on 4.1.128

The masque of Ceres follows hot on the heels of Prospero's lecture on lust. In fact, the masque is a

By Harry Berger Jr

Commentary on 5.1.59

At this zany moment, half-way through Prospero sermonizes his enemies while they stand in the magic

By Harry Berger Jr

Commentary on 5.1.182

When Prospero displays the lovers

CALIBAN

As wicked dew as e'er my mother brushed
 With raven's feather from unwholesome fen
 Drop on you both! A southwest blow on ye
 And blister you all o'er!

PROSPERO

For this, be sure, tonight thou shalt have cramps,
 Side stitches that shall pen thy breath up; urchins
 Shall, for that vast of night that they may work,
 All exercise on thee; thou shalt be pinched
 As thick as honeycomb, each pinch more stinging
 Than bees that made 'em.

CALIBAN

I must eat my dinner.

This island's mine by Sycorax my mother,
 Which thou tak'st from me. When thou cam'st first,
 Thou strok'st me and made much of me, wouldst give me
 Water with berries in't, and teach me how
 To name the bigger light, and how the less,
 That burn by day and night; and then I loved thee
 And showed thee all the qualities o' th' isle,
 The fresh springs, brine pits, barren place and fertile.
 Cursed be I that did so! All the charms
 Of Sycorax, toads, beetles, bats, light on you!
 For I am all the subjects that you have,
 Which first was mine own king; and here you sty me
 In this hard rock, whiles you do keep from me
 The rest o' th' island.

PROSPERO

Thou most lying slave,
 Whom stripes may move, not kindness! I have used thee,
 Filth as thou art, with humane care, and lodged thee
 In mine own cell, till thou didst seek to violate
 The honor of my child.

CALIBAN

O ho, O ho! Would't had been done!
 Thou didst prevent me; I had peopled else
 This isle with Calibans.

MIRANDA

Abhorred slave,
 Which any print of goodness wilt not take,
 Being capable of all ill! I pitied thee,
 To have seen to do thee more harm, to touch thee, to hurt thee,

Much more than a digital book, The Tempest for iPad is designed for social reading, authoring, and sharing, for all readers from students to professional scholars.



Jump to **5.1.31** ?

The Tempest

Experts Hide

Actors From the London Stage Close

Commentary on 5.1.32
 By Folger Master Class
 ☆☆☆☆☆ Review: 5.0

Ariel makes a wonderful test case for a question that resonates whenever Shakespearean parts are cross-cast: what difference does the sex of an actor make in our understanding of a role and interpretation of the text? The duets between Prof. Garber and Prof. Roach for this exchange between Ariel and Prospero center on Ariel's charged claim to be something other than human but also to recognize what humanity means – "Mine would, sir, were I human." They provide lively evidence for exploring this question.

Background. In Renaissance scientific terms, Ariel is a spirit and therefore categorically not possessed of human functions such as sex or, as Ariel observes at

Hast thou, which art but air, a touch, a feeling
 Of their afflictions, and shall not myself,
 One of their kind, that relish all as sharply
 Passion as they, be kindlier moved than thou art?
 Though with their high wrongs I am struck to the quick,
 Yet with my nobler reason 'gainst my fury
 Do I take part. The rarer action is
 In virtue than in vengeance. They being penitent,
 The sole drift of my purpose doth extend
 Not a frown further. Go release them, Ariel.
 My charms I'll break, their senses I'll restore,
 And they shall be themselves.

ARIEL

I'll fetch them, sir.

Exit.

PROSPERO

Ye elves of hills, brooks, standing lakes and groves,
 And ye that on the sands with printless foot
 Do chase the ebbing Neptune and do fly him
 When he comes back; you demi-puppets that
 By moonshine do the green sour ringlets make,
 Whereof the ewe not bites; and you whose pastime
 Is to make midnight mushrooms, that rejoice
 To hear the solemn curfew; by whose aid,
 Weak masters though ye be, I have bedimmed
 The noontide sun, called forth the mutinous winds,
 And 'twixt the green sea and the azured vault

Timeline: 00:36:44 to -18:43

Enjoy a full-length audio performance from the noted company [Actors From the London Stage](#). [Play text scrolls as you listen](#). [Additional audio takes provide alternative performances of key passages.](#)





Jump to 4.1.147 ? The Tempest f Search

Against my life: the minute of their plot
Is almost come.
[To the SPIRITS]
Well done! Avoid! No more!

FERDINAND
This is strange. Your father's in some passion
That works him strongly.



MIRANDA
Never till this day
Saw I him touched with anger so distempered.

145

PROSPERO  
You do look, my son, in a moved sort,
As if you were dismayed: be cheerful, sir.
Our revels now are ended. These our actors,
As I foretold you, were all spirits and
Are melted into air, into thin air;
And, like the baseless fabric of this vision,
The cloud-capped tow'rs, the gorgeous palaces,
The solemn temples, the great globe itself,
Yea, all which it inherit, shall dissolve,
And, like this insubstantial pageant faded,
Leave not a rack behind. We are such stuff
As dreams are made on, and our little life
Is rounded with a sleep. Sir, I am vexed;
Bear with my weakness; my brain is troubled.
Be not disturbed with my infirmity.
If you be pleased, retire into my cell
And there repose. A turn or two I'll walk
To still my beating mind.

FERDINAND, MIRANDA
We wish your peace.
Exeunt [FERDINAND and MIRANDA].

Take notes on key passages
and share them to Facebook
with the touch of a button!



Share your notes
immediately to a
Facebook
discussion group



Jump to **5.1.32** ? **The Tempest** Search

CUE OFF Hide

global (1)

metatheatricality (4)

Act 1, Scene 2 (1.2.393)
 This music crept by me upon the waters,
 Tue, Apr 3, 2012

Act 4, Scene 1 (4.1.129)
 With your saged crowns and ever-harmless looks,
 Tue, Apr 3, 2012

Act 4, Scene 1 (4.1.151)
 And, like the baseless fabric of this vision,
 Tue, Apr 3, 2012

EPILOGUE (6.1.2)
 And what strength I have's mine own,
 Tue, Apr 3, 2012

class discussion (4)

postcolonial (5)

Enter certain Reapers, properly habited. They join with the Nymphs in a graceful dance; towards the end whereof PROSPERO starts suddenly and speaks; after which, to a strange, hollow, and confused noise, they heavily vanish.

PROSPERO

You do look, my son, in a moved sort,
 As if you were dismayed: be cheerful, sir.
 Our revels now are ended. These our actors,
 As I foretold you, were all spirits and
 Are melted into air, into thin air; 150
 And, like the baseless fabric of this vision,
 The cloud-capped tow'rs, the gorgeous palaces,
 The solemn temples, the great globe itself,
 Yea, all which it inherit, shall dissolve,
 And, like this insubstantial pageant faded, 155
 Leave not a rack behind. We are such stuff
 As dreams are made on, and our little life
 Is rounded with a sleep. Sir, I am vexed;
 Bear with my weakness; my brain is troubled.
 Be not disturbed with my infirmity. 160
 If you be pleased, retire into my cell
 And there repose. A turn or two I'll walk
 To still my beating mind.

PROSPERO

Ye elves of hills, brooks, standing lakes and groves,
 And ye that on the sands with printless foot
 Do chase the ebbing Neptune and do fly him 35
 When he comes back; you demi-puppets that
 By moonshine do the green sour ringlets make,
 Whereof the ewe not bites; and you whose pastime
 Is to make midnight mushrooms, that rejoice
 To hear the solemn curfew; by whose aid, 40

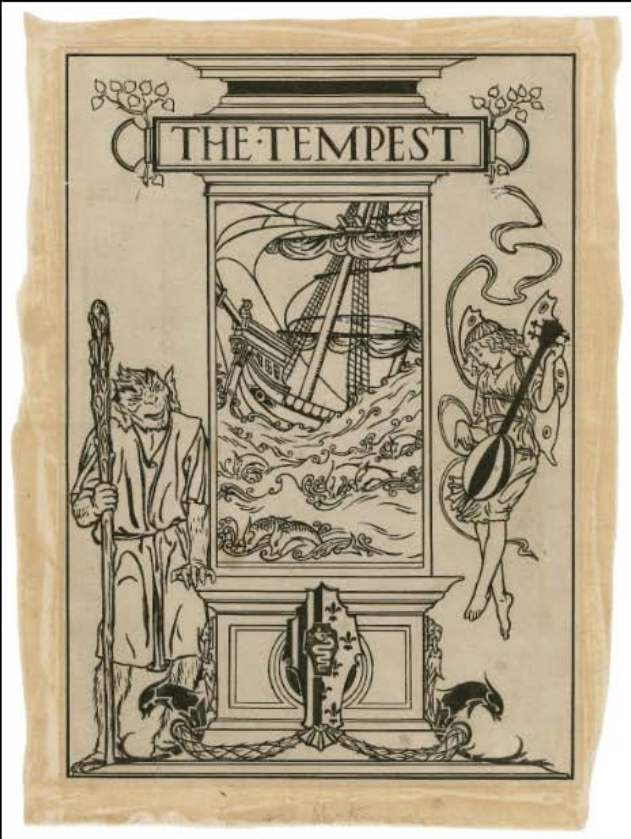
Create your own play text. Select key passages you like, annotate them, and share with friends, colleagues, and readers worldwide.



Resources

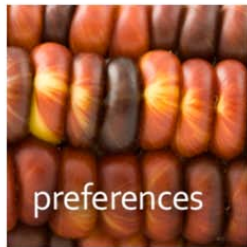
Back The tempest

- Audio
- Video
- Image Gallery**
- Links



The tempest [graphic] / [Robert Anning Bell].

Illustrations, podcasts and video from [The Folger Shakespeare Library's collection bring alive Renaissance English culture and theater.](#)



Customize your experience. Quiet when you need it, social when you want it.

theTempest



Summary

- Many lessons learned, many mistakes
 - E.g. now need to integrate SPACES and COLLABORATORY, and it is not easy
- To HUB or not to HUB? – very often asked question at the CRC
 - If community building and collaborative tools are important – YES
 - If just data access and sharing – not necessary, there are more lightweight solutions.
- “You go to a war with the army you have”



Thank you!