

*LibX 2.0 - an Open Source,
Community Platform for Delivering
Library Services*

Code4Lib 2009
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LibX 1.0

- Toolbar and right-click context menu
- Adaptive and user-configurable context menus
- OpenURL support
- Magic Button (Google Scholar support)
- Web Localization via Embedded Cues
- Autolinking
- Off-campus access via EZProxy or WAM
- Support for CiteULike
- Support for COinS
- Support for xISBN
- Show/Hide Hotkey

LibX 1.0

LibX - browser plugin for Libraries - Mozilla Firefox

HDPV - Mozilla Firefox

http://portal.acm.org/citation.cfm?id=1409720.1409729&coll=Portal&dl=GUIDE&CFID=47698898&CFTOKEN=...

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Search: The ACM Digital Library The Guide

THE GUIDE TO COMPUTING LITERATURE

Feedback

HDPV: interactive, faithful, in-vivo runtime state visualization for C/C++ and Java

Full text Pdf (390 KB)

Source **Software Visualization** [archive](#)

Proceedings of the 4th ACM symposium on Software visualization [table of contents](#)

Ammersee, Germany

SESSION: Software visualization for testing and debugging [table of contents](#)

Pages 47-56

Year of Publication: 2008

ISBN: [978-1-60558-112-5](#)

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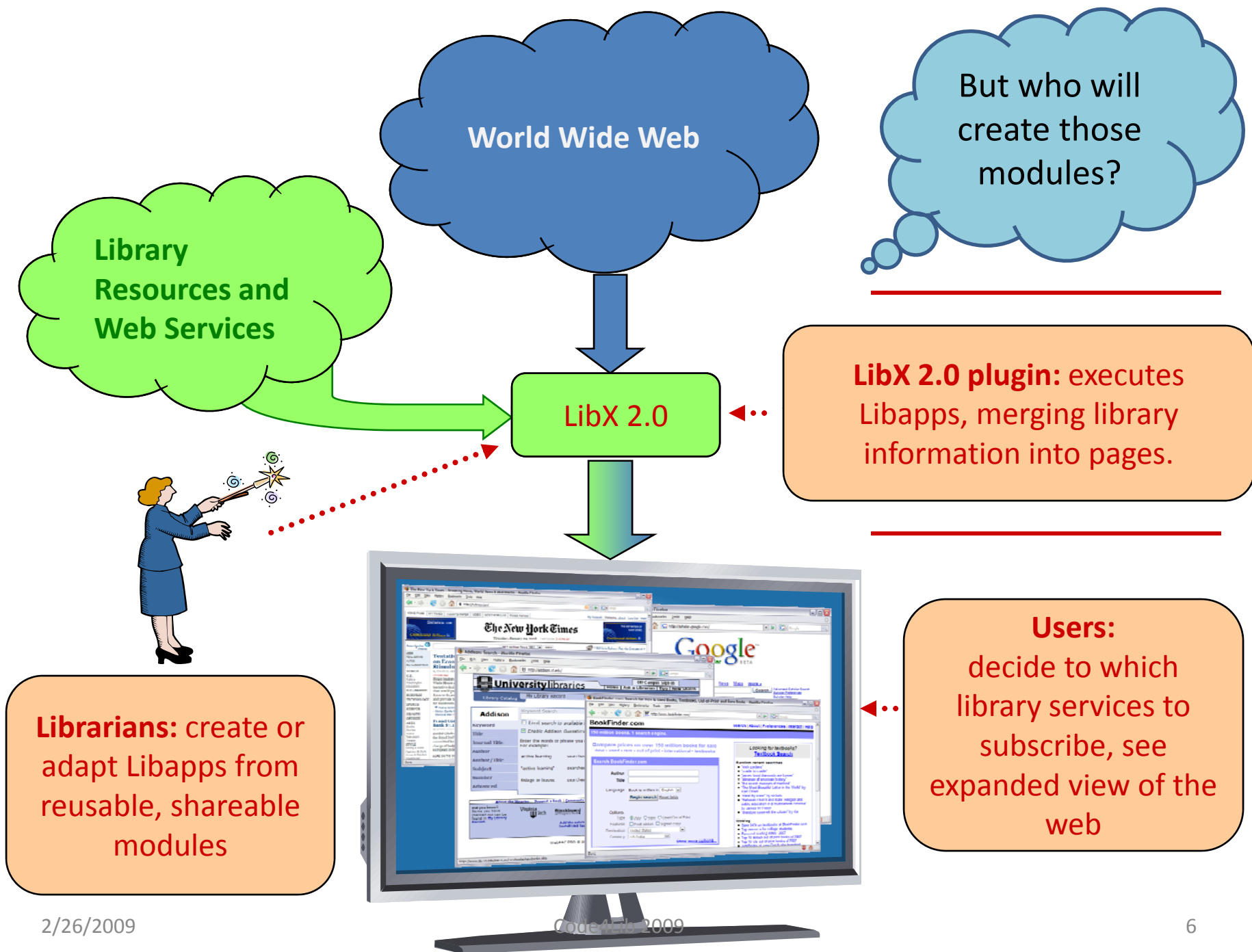
<ul style="list-style-type: none">Contact WikipediaDonate to WikipediaHelp	Contents [hide] 1 Data binding in general
------------------------------------------------------------------------------------------------------------	-----------------------------------------------------

The LibX Edition Builder

- A configuration management tool for creating customized versions of LibX
 - Customized version of LibX = **LibX edition**
- Edition configuration includes descriptions of community-local resources:
 - OPACs, OpenURL, Proxy, Databases, Links, Branding, ...
- Edition Builder is easy to use
 - Makes heavy use of OCLC registries
 - Uses sophisticated auto-detection techniques
 - Usable by *librarians*, not just programmers
- Anybody can create, share, and manage editions
- Over 550 edition as of now, new ones created at a pace of 20/month
 - Huge human investment
 - 10's of thousands of end users

Where to go from here?

- A toolbar is great, but...
- Emerging technology trends
 - Service-oriented architectures, web services interfaces – soon even to ILS!
 - Data mash-ups; HTML widgets
- Educational trends: librarians, educators, and users create
 - Online tutorials, subject guides, visualizations
 - Social OPACs: tagging, reviews, recommender services



The LibApp Model

- How can the interaction of LibX with web content be modeled?
- Typical tasks involve
 - Examination of the page and extraction of information
 - Processing of information
 - Modification of the page
- A *Module* is a small piece of JavaScript code along with a metadata description of its input and/or output
- A *Libapp* is a group of modules
- A *Package* is a folder of libapps and packages

Modules

- Modules are named using a URL and published via REST/AtomPub
- Modules can reference JavaScript libraries (e.g., jQuery) and CSS stylesheets
 - Execute in a parallel environment to the client page
- Modules are trusted, with full access to LibX API, including edition configuration and user preferences
- Modules communicate with each other via tuple space

LibX Tuple Spaces

tuple = TAKE(template)

- If a tuple matching template exists in the tuple space, remove it and return it
- If no tuple exists, wait until a matching tuple is written, remove it and return it

WRITE (tuple)

- Write a tuple into the space
- If a TAKE is pending with a matching template, complete the TAKE

Tuples and Templates are JavaScript objects in JSON notation.

Tuple example: `{ isbn: "0743226720" }`

Template example: `{ isbn : * } // any tuple with 'isbn' field`

Rationale for Tuple Spaces

Software Engineering

- Low coupling between modules
- Independent composition
- Simplicity
- Suitable for meta-programming

Handling Asynchrony

- User actions happen asynchronously
- Information arrives asynchronously from external sources
- Execution order independence

LIBAPP DEMO 1
CREATE A PRESENCE FOR THE LIBRARY

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What's New at ACM




[CrossRef Search](#)

Pilot program to create full-text interpublisher searchability.

Digital Library Employs New Search Technology

New Platform Adds More Powerful Search Capability. Read more on the [New DL Search information page](#) and in the [Press Release](#).

ACM Launches Beta Version of Author Profile Pages in Digital Library



Author Profile

New feature includes bibliometrics and offers quick view of authors' contributions to the field.

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Done

Step 1: Arrangement

Description: Display a Help icon on the ACM page that plays a video when clicked.

Include: /portal\acm\.org.* /

Require: jquery

```
// Place the current edition's icon into the ACM portal page, next to the
// current search button.
```

```
libx.space.write ( {
  needsuserbutton: $('input[src="http://portal.acm.org/images/search_small.jpg"]'),
  image: libx.edition.options.icon,
  text: "Click for a short tutorial",
  action: function () {
    // When user clicks, offer to show a YouTube clip
    libx.space.write ( { youtube: "ehkfEcQ5YnQ" } );
  }
} );
```

Step 2: Place UI Button

Description: Place a clickable image into a page

Include: `./.*`

Guarded-By: `{ needsuserbutton: libx.space.WILDCARD, action: libx.space.WILDCARD }`

Require: `jquery`

```
// Create a link with an embedded image
```

```
var a = $("
```

```
a.append('');
```

```
a.attr('title', tuple.text || "");
```

```
// Insert link after element where a 'user button' is wanted
```

```
$(tuple.needsuserbutton).after(a);
```

```
// Associate onclick handler and animate
```

```
$(a).click(tuple.action).fadeOut("slow").fadeIn("slow");
```


Step 3: Create Youtube Clip

Description: Create a notification to play a YouTube video, based on Video ID

Include: `./.*/`

Guarded-By: `{ youtube: libx.space.WILDCARD }`

`// Create HTML based on tuple.youtube`

`libx.space.write ({`

```
  notify : '<object width="425" height="344"><param name="movie"
    value="http://www.youtube.com/v/'+tuple.youtube+'&hl=en&fs=1"></param><par
    am name="allowFullScreen" value="true"></param><param
    name="allowscriptaccess" value="always"></param><embed
    src="http://www.youtube.com/v/'+tuple.youtube+'&hl=en&fs=1"
    type="application/x-shockwave-flash" allowscriptaccess="always"
    allowfullscreen="true" width="425" height="344"></embed></object>',
```

```
  options: { width: '450px' }
```

```
});
```

Step 4: Display HTML Notification

Description: Display HTML notifications via an embedded panel using jGrowl

Include: `./.*/`

Guarded-By: `{ notify: libx.space.WILDCARD }`

Require: `jquery`

Require: `jgrowl`

Require: `jgrowl.css`

`// Set sticky:true unless provided in tuple.options`

`var jGrowlOptions = $.extend({}, {sticky:true}, tuple.options);`

`// Display notification`

`$.jGrowl(tuple.notify, jGrowlOptions);`

LIBAPP DEMO 2

“GET FULL TEXT LINKS FOR COINS”

CiteULike: Everyone's library - Mozilla Firefox

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http://www.citeulike.org/home

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Detecting influenza epidemics using search engine query data
Nature (19 November 2008)
 by Jeremy [Ginsberg](#), Matthew H [Mohebbi](#), Rajan S [Patel](#), Lynnette [Brammer](#), Mark S [Smolinski](#), Larry [Brilliant](#)
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Coprostanol as sewage tracer in McMurdo Sound, Antarctica
Marine Pollution Bulletin, Vol. 25, No. 9-12. (1992), pp. 328-333.
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Convection in the Earth's core driven by lateral variations in the core's mantle boundary heat flux

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 language learning
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 ontology performance
 philosophy physics
 prediction protein
 proteomics psychology
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 science search selection
 semantic similarity
 simulation social
 software statistics
 stress structure survey
 systems technology
 theory transcription
 vision visualization water
 web yeast

Done

COinS, the LibX 2.0 way

Include: `./.*`

Description: Find COinS

Require: jquery

```
$("span.Z3988").each(function () {  
  libx.space.write({  
    coins: this,  
    contextobj: this.getAttribute('title')  
  });  
});
```

```
<span class="Z3988"  
title="ctx_ver=Z39.88-  
2004&rft_val_fmt=info:ofi/fmt:kev:mtx:j  
ournal&rft_id=info:pmid/16646082&rft.g  
enre=article">
```

COinS, the LibX 2.0 way

Include: `./.*`

Description: `Link COinS`

Guarded-By: `{ coins: libx.space.WILDCARD }`

Require: `legacy-cues`

```
var cue = new libx.cues.StandardCoins(tuple.contextobj);  
cue.insertBefore(tuple.coins);
```

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LibX VT Keyword Search Addition Clear Scholar

AuthorMapper
A free analytic tool from Springer

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environment evaluation
evolution expression
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internet knowledge
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management
measurement memory
method methodology
methods microarray
mobile model modeling
modelling network
networks noise of
ontology performance
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science search selection
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software statistics
stress structure survey
systems technology
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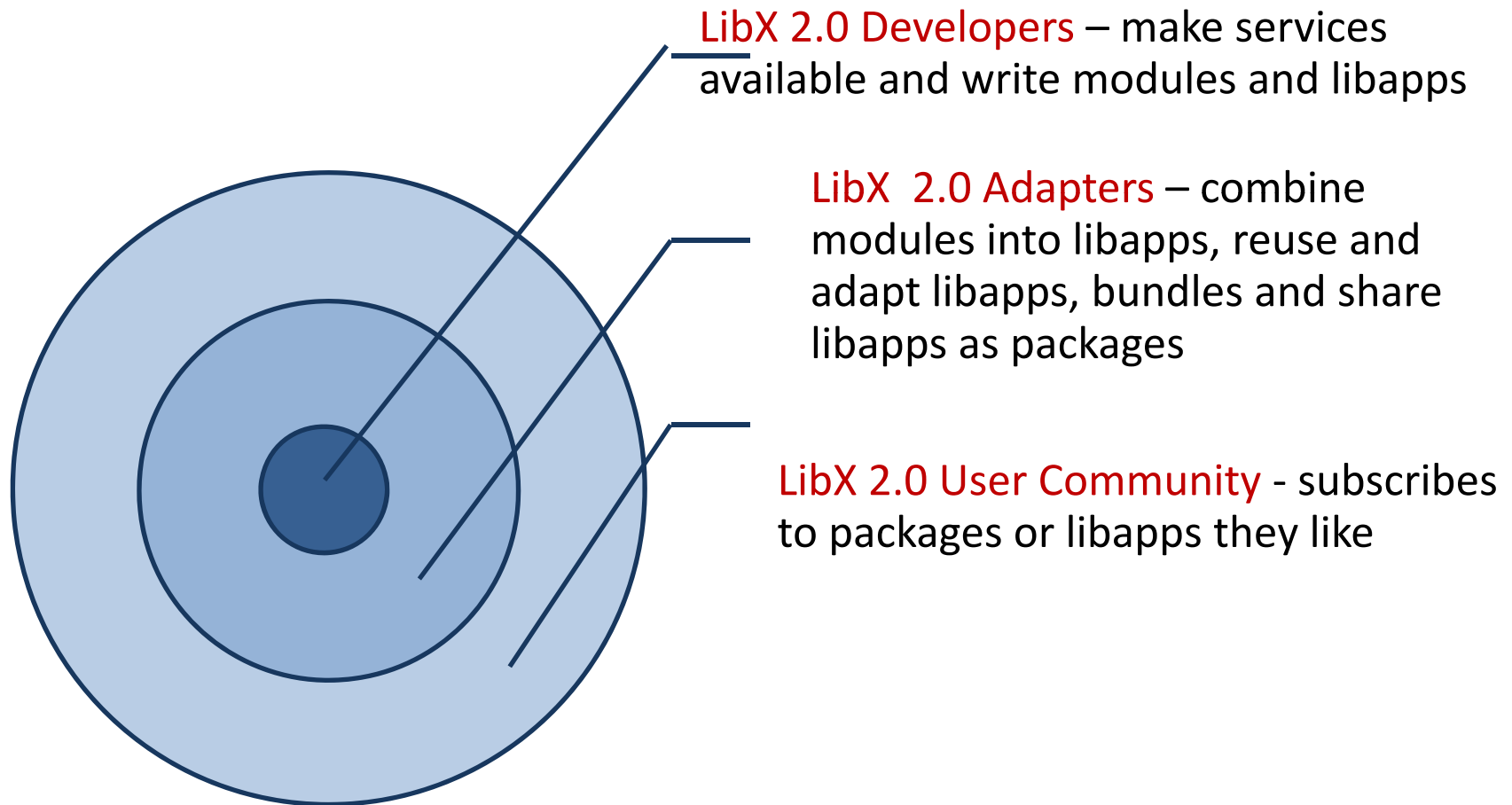
Add Link/360 direct link

```
var link360 = libx.services.link360.getLink360(libx.edition);
if (link360)
  link360.getMetadata({
    query: tuple.contextobj,
    type: 'article',
    hasFullText: function (xmlDoc, url, databaseName) {
      cue.setAttribute('href', url);
      cue.setAttribute('title', "Users of " + libx.edition.links.primary.label
        + " click here for full text via " + databaseName);
      cue.setImageAttribute('src', 'http://www.lib.vt.edu/images/getvtext.gif');
      cue.animate();
    },
  });
```


Transitioning from LibX 1.0 to 2.0

- Complete redesign of LibX client code
- Browser-independent, strictly object-oriented JavaScript code with proper namespacing and encapsulation
- Provide full documentation (via jsdoc, accessible in about:libx)
- Provide built-in interactive reflection of data structures
- Include unit tests (run via Rhino)
- Hot updatable

LibX 2.0 – Roles



LibX 2.0 Community Repository

- Based on tuple space model, create metadata descriptions for modules
- Create a repository of modules, libapps, and packages
- Editable like a Wiki
- Integrate repository into Edition Builder
 - Include consistency checking
- This will be done during the next 2 years (but libapps can already be created now)

Call for Developers

- Launched Developer Website
 - <http://developers.libx.org>
- Launched mailing list
 - libx-dev@googlegroups.com
- Transition path: update from LibX 1.5
- Agile roll-out, no “releases”

- We invite you to try and play with it!

LibX Team

- Annette Bailey
- Godmar Back
- Kyrille Goldbeck
- Mike Doyle
- Arif Khokar
- Travis Webb
- Alumni
 - Nathan Baker
 - Tilottama Gaat
 - Tobias Wieschnowsky

