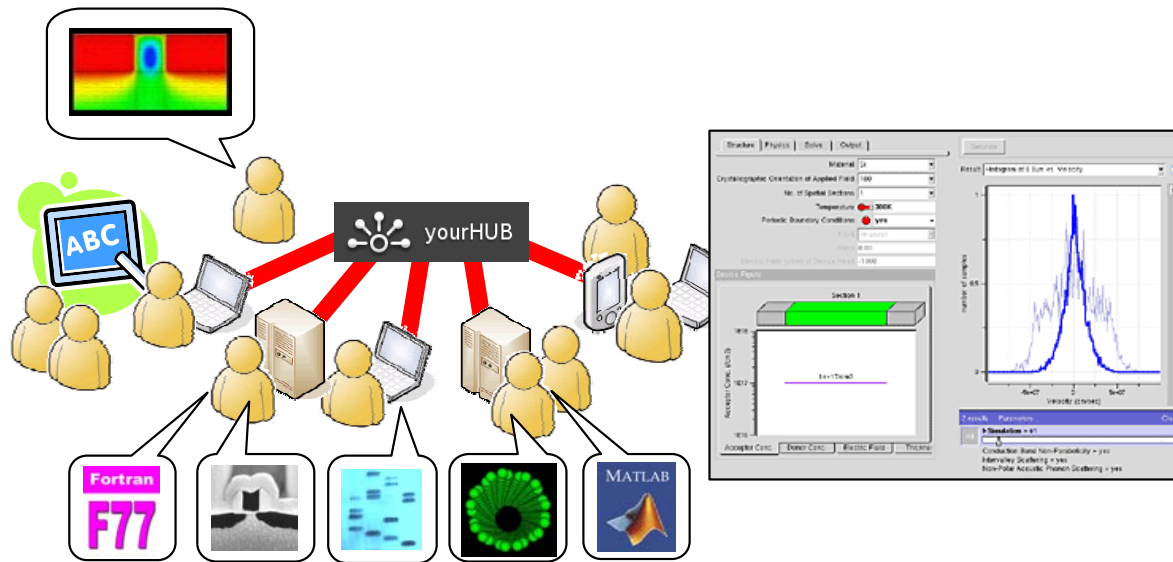


# Uploading and Publishing New Tools

Michael McLennan  
Software Architect  
HUBzero™ Platform for Scientific Collaboration

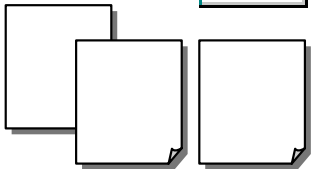


# Why bother uploading tools?

Most people just post their source code:

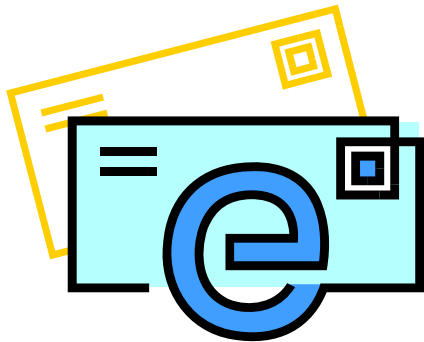
Download

(TGZ, 170.91 kb)



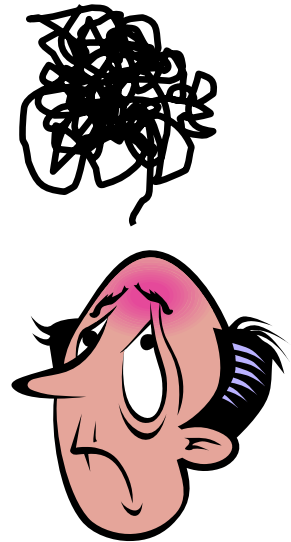
Users have to:

- Download
- Unpack
- Compile / Install *...oops! Something went wrong here*



Hello,  
I am grad student from Kazakhstan.  
Your tool not compile for me. I get  
errors. That's a not very nice.

Hey, can you help me?



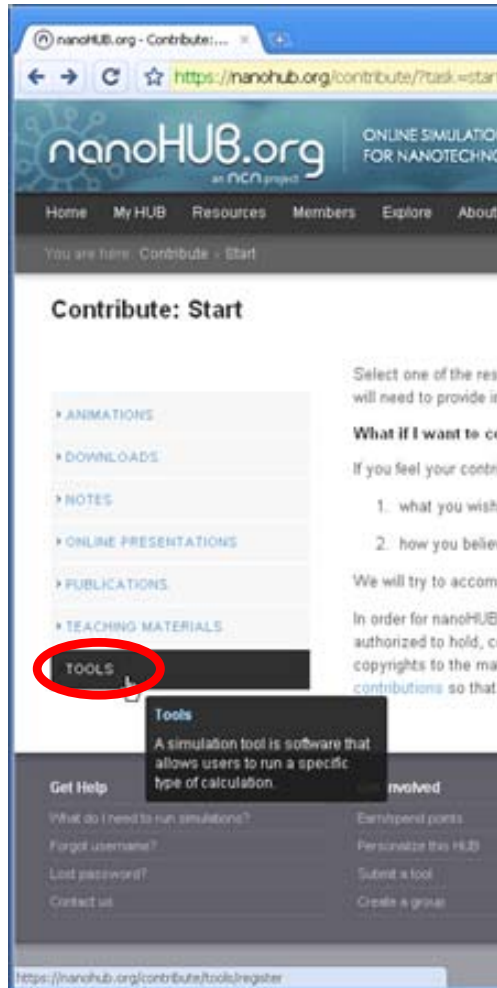
# Access tools online

The screenshot displays the nanoHUB.org website in a Windows Internet Explorer browser. The main page features the nanoHUB.org logo and navigation menus. A sidebar on the left provides information about the CNTbands tool, including its version (2.1) and contributors (Youngki Yoon, James K. Johnson, Akira Matsudaira, Diego Kienle, and Gongchao Pu). The main content area shows the tool's interface, which includes a search bar, user account options, and a simulation window. The simulation window is titled "CNTbands" and contains a "Tool" tab. The simulation parameters are set to "Carbon Nanotube" with a "Pz orbital" simulation method. The "Chirality (n,m)" is set to (7,7), and the "Tight Binding Energy" is 3eV. The "Carbon-carbon spacing" is 1.42A, and the "Length in 3-D view" is 15. A 3D molecular structure of the nanotube is shown in the center of the simulation window. The interface also includes a "Simulate" button, a "Result" dropdown menu, and a "Clear" button.

# Start the upload process

The screenshot shows the nanoHUB.org website interface. The main navigation menu includes Home, My HUB, Resources, and Members. The 'Resources' menu is expanded, showing options like Animations, Courses, Downloads, Learning Modules, Notes, Online Presentations, Publications, Series, Teaching Materials, Tools, and Workshops. The 'Contribute' link is highlighted. The main content area is titled 'Contribute' and features a 'Get Started' button circled in red. Below this, there are sections for 'Before starting', 'Intellectual Property Considerations', and 'Questions or concerns?'. At the bottom, there are links for 'What can I contribute?' with sub-sections for Animations, Downloads, and Notes.

# Tool registration form

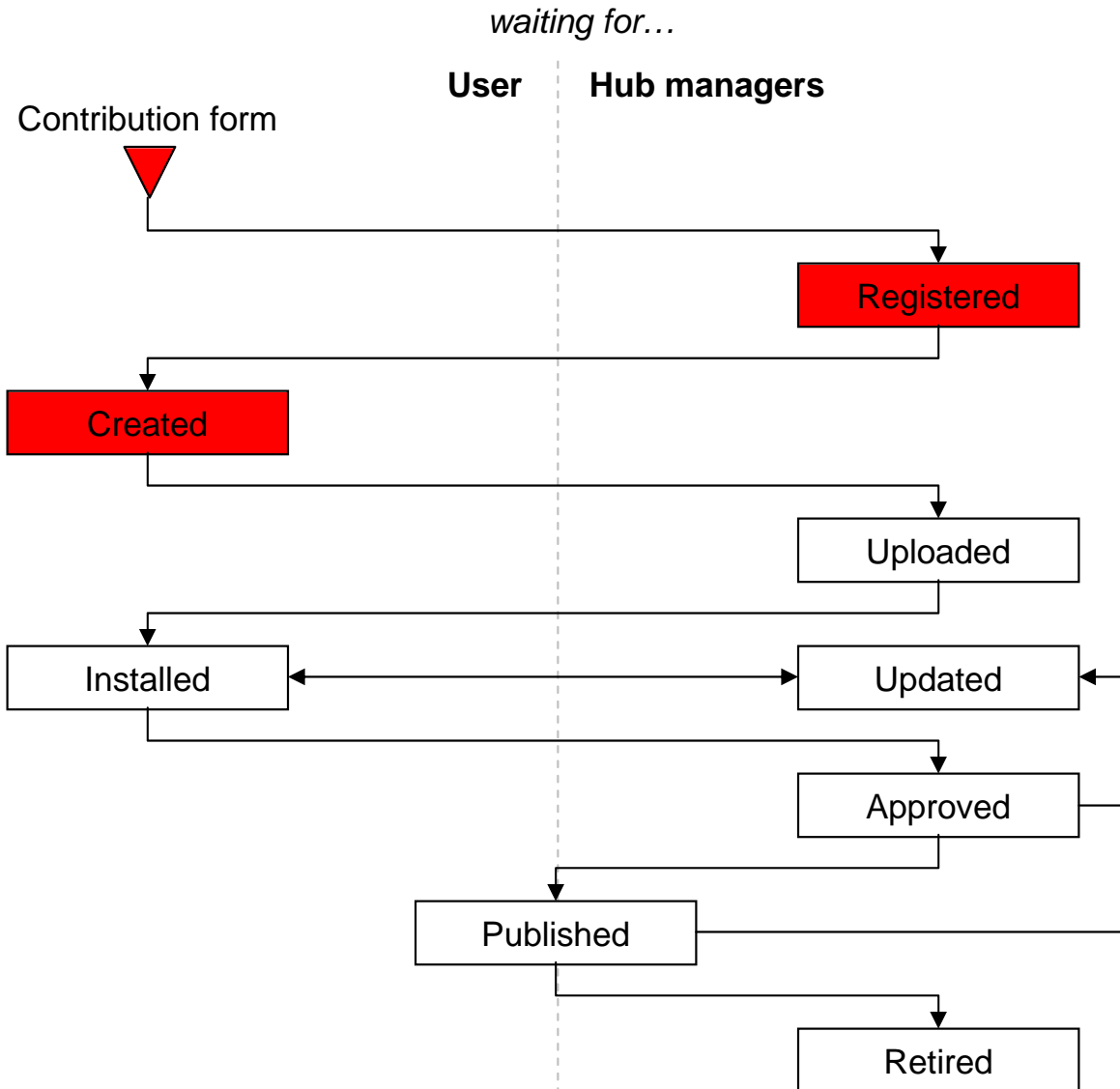


The screenshot shows the 'About your tool:' registration form. Red arrows point to various fields with annotations:

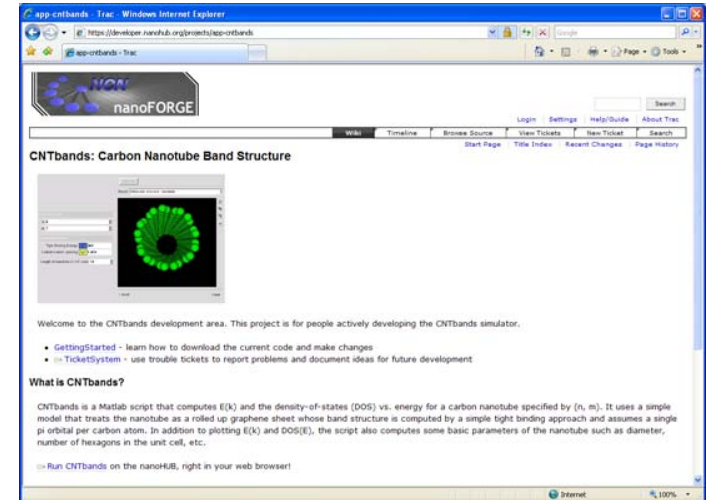
- Tool Name:** REQUIRED. Input: `alpha123`. Annotation: **alpha123**
- Title:** REQUIRED. Input: `Nice Tool Name`. Annotation: **Nice Tool Name**
- Version:** Input: `1.2.3a`. Annotation: **1.2.3a**
- At a glance:** REQUIRED. Input: `It does this...`. Annotation: **It does this...**
- Tool Access:** REQUIRED. Dropdown menu. Annotation: **Who can run it**
- Source Code Access:** REQUIRED. Dropdown menu. Annotation: **Who can access code**
- Project Area Access:** REQUIRED. Dropdown menu. Annotation: **Who can access wiki**
- Development team:** REQUIRED. Input: `mmclennan`. Annotation: **Team members**

Additional text on the right side of the form includes: 'Once you register your tool, you cannot be careful to pick a good one.', 'What is Source Code Access?', and 'You can choose to make your source code open or closed to the public. Open source tools have a clear license that allows others to download your code and build upon your work. Closed source tools will be able to run...'

# Tool development process



<https://yourhub.org/tools>



Hub managers create a project area for your tool

- Wiki for project documentaton
- Subversion source code control
- Code change history

# Your project area

Buttons to access project functions:

- Wiki documentation
- Source code
- Timeline of changes

*NOTE: You may have to log in to see some buttons*

# Editing wiki pages

The screenshot shows two browser windows. The left window displays the Trac website for CNTbands, with the 'Edit This Page' button circled in red. The right window shows the raw Wiki Markup for the 'WikiStart' page.

**Wiki Markup**

```

= CNTbands: Carbon Nanotube Band Structure =
[[image(cntbands.gif)]]

Welcome to the CNTbands development area. This
* GettingStarted - learn how to download the code
* [[link(/report TicketSystem)]] - use trouble tickets to report problems

== What is CNTbands? ==

CNTbands is a Matlab script that computes E(k, m). It uses a simple tight binding approach and assumes a single pi orbital per carbon atom. In addition to plotting the band structure, it computes some basic parameters of the nanotube.

[https://www.nanohub.org/simulation_tools/cntbands]

== How do I use this site? ==

You can edit any of the pages in this site at:

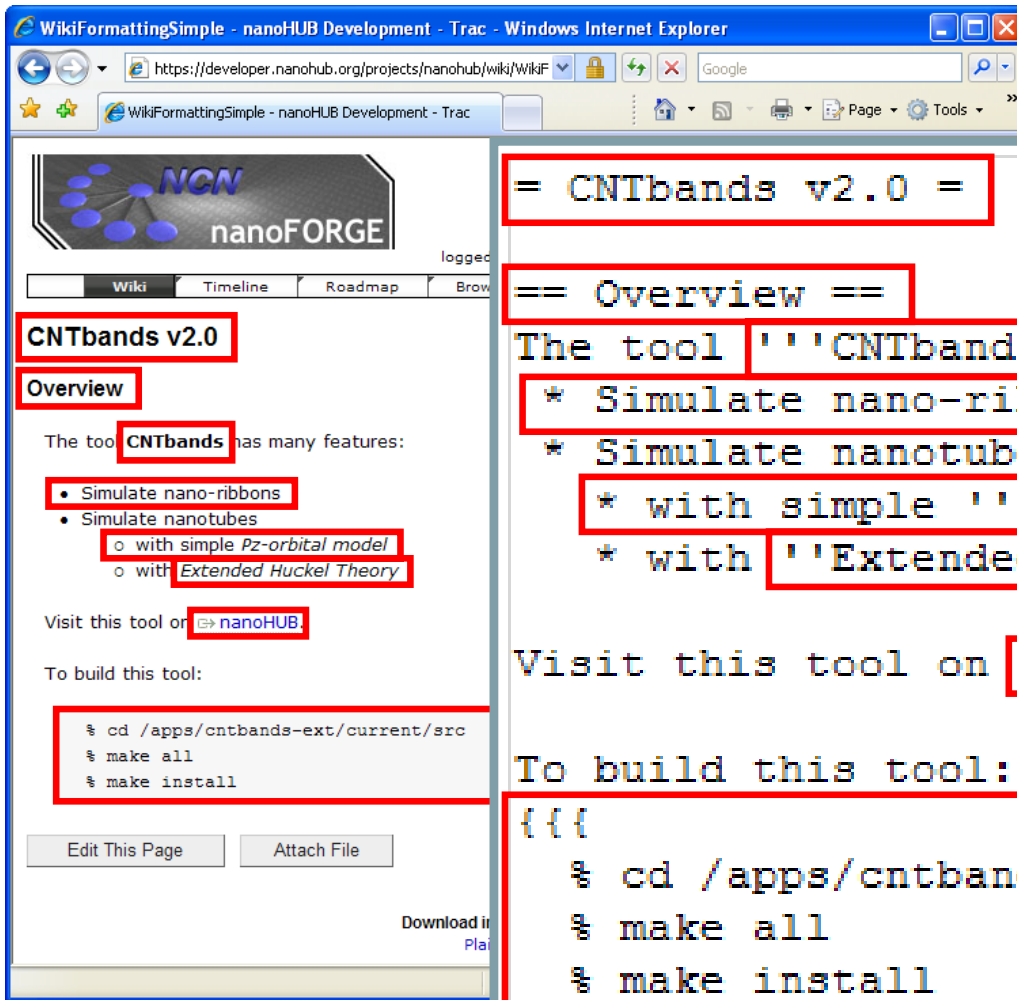
* WikiFormatting -- page formatting tips
* Images -- embedding images in wiki pages
* TracGuide -- Built-in Documentation
* Trac FAQ -- Frequently Asked Questions
* The Trac project -- Trac Open Source

Change information
Your email or username:
mmc
    
```



# Wiki mark-up

Complete instructions in your project area at [wiki/WikiFormatting](#)



```
= CNTbands v2.0 =
```

```
== Overview ==
```

The tool `'CNTbands'` has many features:

- \* Simulate nano-ribbons
- \* Simulate nanotubes
  - \* with simple `'Pz-orbital model'`
  - \* with `'Extended Huckel Theory'`

Visit this tool on [\[http://www.nanohub.org nanoHUB\]](http://www.nanohub.org).

To build this tool:

```
{{
  % cd /apps/cntbands-ext/current/src
  % make all
  % make install
}}
```

# Linking wiki pages

**CNTbands v2.0**

**Overview**

The tool **CNTbands** has many features:

- Simulate nano-ribbons
- Simulate nanotubes
  - with simple *Pz-orbital model*
  - with *Extended Huckel Theory*

See [NewPage](#) for more information.

```

    * with simple 'Pz-orbital model'
    * with 'Extended Huckel Theory'

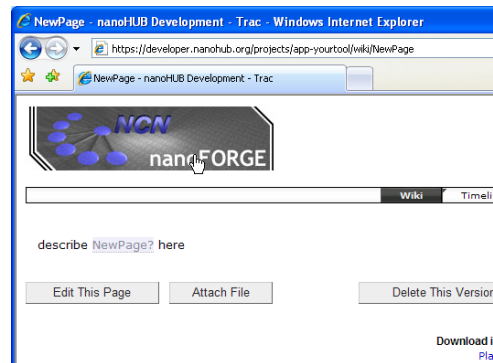
    See NewPage for more information.

    Visit this tool on [http://www.nanohub.
    To build this tool:
    
```

Any word with mixed case is treated as a link

Click on any link? to create that page:

See [NewPage?](#) for more information.



# What's happening?

The screenshot shows a web browser window at nanoHUB.org. The main content area is titled "My Contributions" and is divided into two sections: "Tools" and "Other Contributions in Progress". In the "Tools" section, a contribution named "biosensorlab" is listed with a status of "created!". The name "biosensorlab" is circled in red. To the right of the name are icons for questions (0), shares (0), and warnings (0). Below the "Tools" section is the "Other Contributions in Progress" section, which currently shows "No contributions found." and a "Start a new contribution" button. A mouse cursor is pointing at the "Start a new contribution" button. On the left side of the browser window, there are several sidebar panels: "My Tools" (listing recent tools like CNTbands and Resonant Tunneling Diode Simulator), "My Favorites" (empty), "My Groups" (empty), and a smaller version of the "My Contributions" section.

# Know where you stand

The screenshot shows the nanoHUB.org website interface. The browser address bar displays 'https://nanohub.org/contribtool...'. The page title is 'Contribtool: Status for bioe...'. The status is 'Registered Created Upload'. Below this, there is a table of tool information:

Tool Information <a href="#">edit</a>	
Title	Bio-sensor Lab
Version	This version 1.0
At a glance	Simulates
Description	<a href="#">Preview</a>   <a href="#">Edit</a>
VNC geometry	760x600
Tool execution	restricted to user
Source code	closed source
Project area	restricted to de
Development team	N/A

Below the table, there is a section for 'Developer Tools' with links for 'History', 'Wiki', 'Source', and 'Timeline'. At the bottom of the page, there is a link 'here to let us know'.

## We are waiting for You

Once your source code has been uploaded into your project area, click here to let us know:

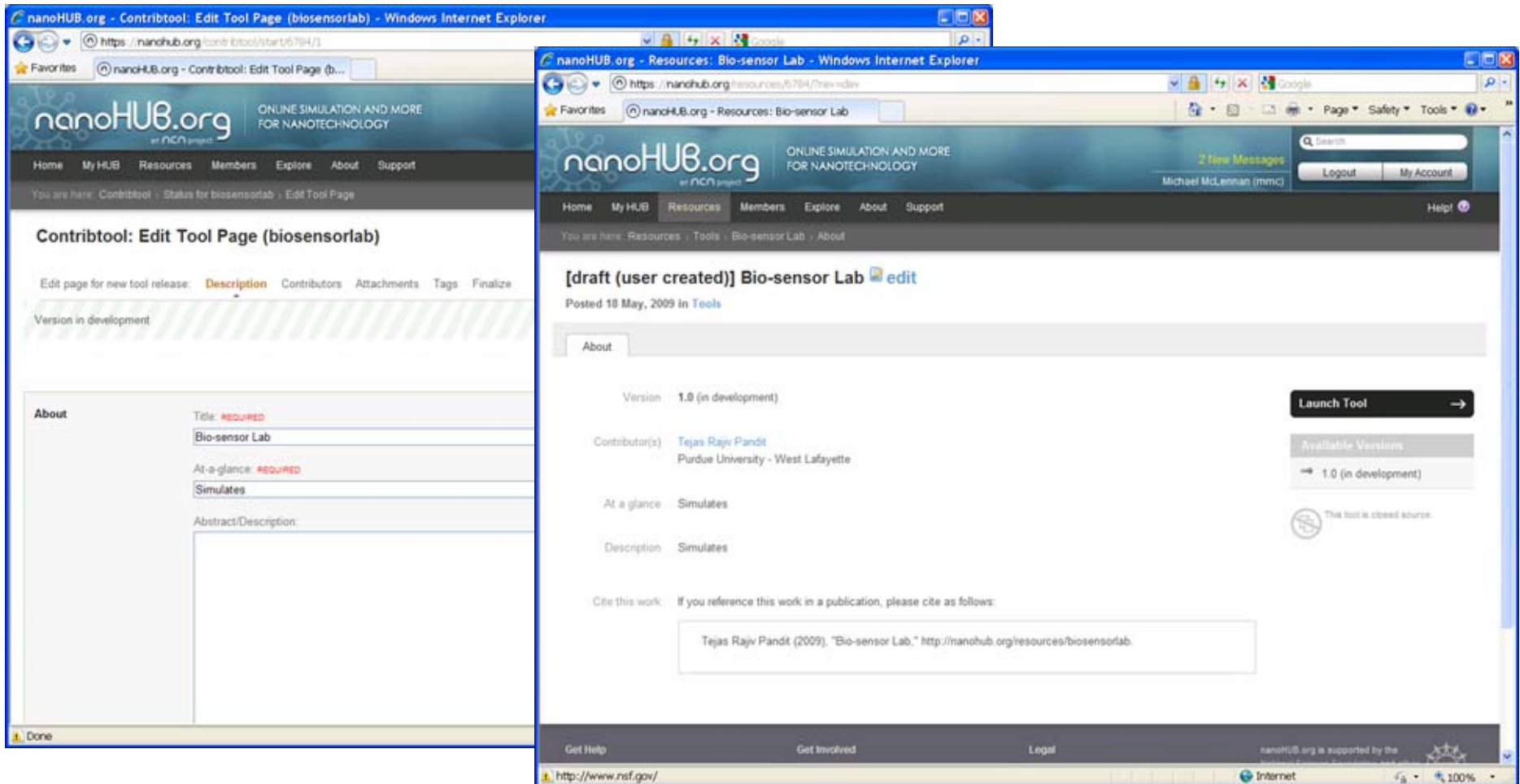
➔ [My code has been uploaded](#)

### Remaining steps before we can publish your tool:

- [Register your tool on the nanoHUB.org](#)
- [Upload your source code I've done this](#)
- ➔ [Make the page that describes your tool. Create this page...](#)
- [Test and approve your tool](#)
- [Publish your tool so that others can see it on the nanoHUB.org](#)



# Edit your tool information page



This is the page that people see when they find your tool on the hub

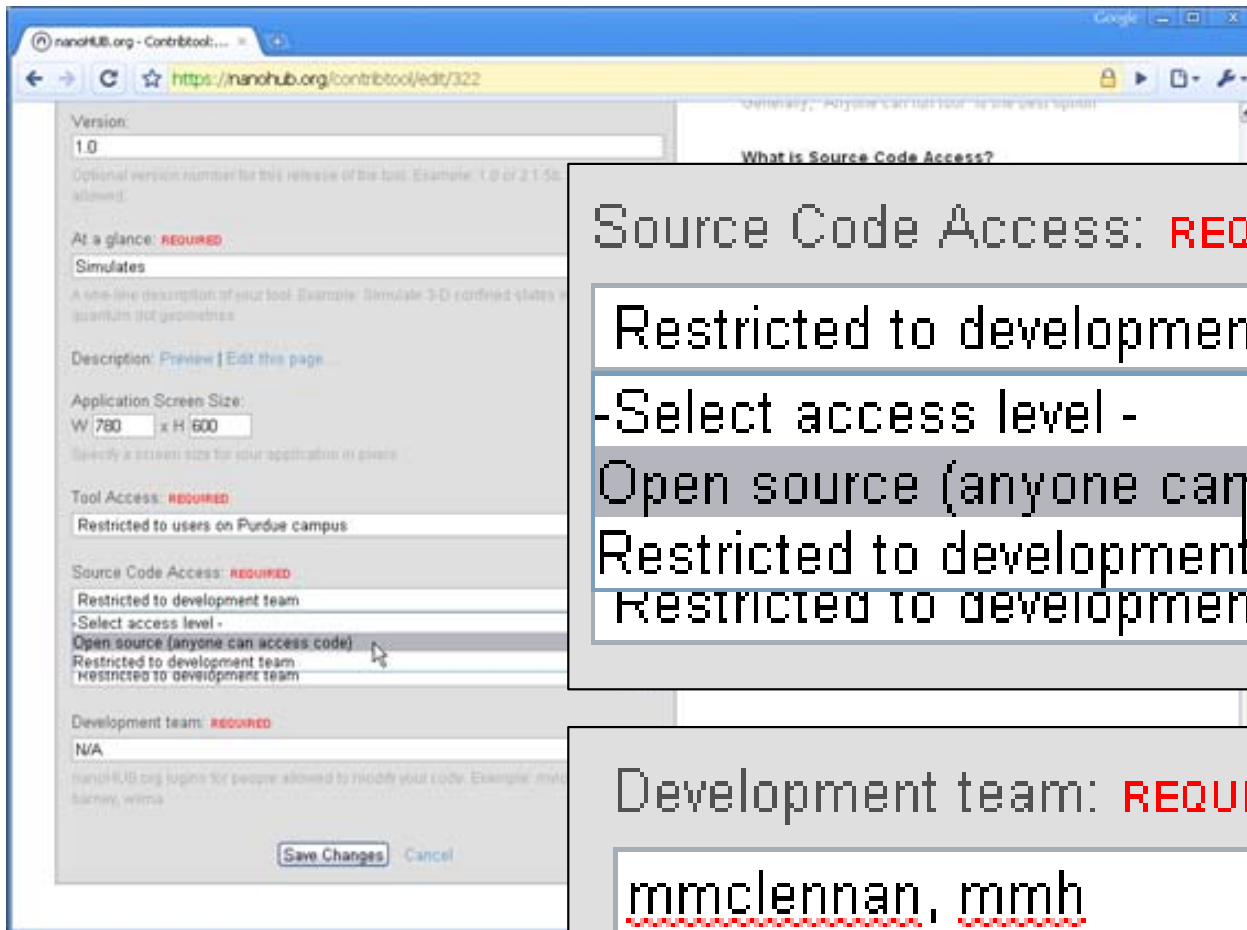
# Know where you stand

The screenshot shows a web browser window at nanoHUB.org. The page title is "Contribtool: biosensorlab - Created". A callout box highlights an "edit" button with a pencil icon. Below the callout is a "Tool Information" table:

Tool Information	
Title	Bio-sensor Lab (biosensorlab - id #322)
Version	This version 1.0 (under development)
At a glance	Simulates
Description	<a href="#">Preview</a>   <a href="#">Edit this page</a>
VNC geometry	760x600
Tool execution	restricted to users on Purdue campus
Source code	closed source
Project area	restricted to development team
Development team	N/A

Below the table is a "Developer Tools" section with links for History, Wiki, Source, Timeline, Message, and Cancel. To the right, a "What's next?" section provides instructions on how to use the project area, including links to learn more about uploading source code and using the Rapture toolkit.

# Edit your tool settings



Source Code Access: **REQUIRED**

Restricted to development team

---

-Select access level -

Open source (anyone can access code)

Restricted to development team

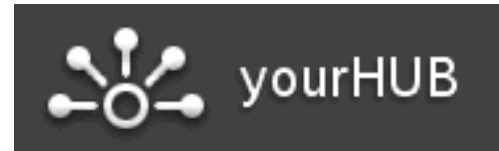
Restricted to development team

Development team: **REQUIRED**

mmclennan, mmh

# Putting out Open Source

```
/*  
 * =====  
 * AUTHOR: Michael McLennan  
 * Copyright (c) 2010 Purdue University  
 *  
 * See the file "license.terms" for information on  
 * usage and redistribution of this file, and for a  
 * DISCLAIMER OF ALL WARRANTIES.  
 * =====  
 */  
...
```



Version 2.3 - published on 18 Dec 2009

DOI: 10254/nanohub-r1838.5 [cite this](#)

Open source: [license](#) | [download](#)



[www.opensource.org](http://www.opensource.org)



license.terms

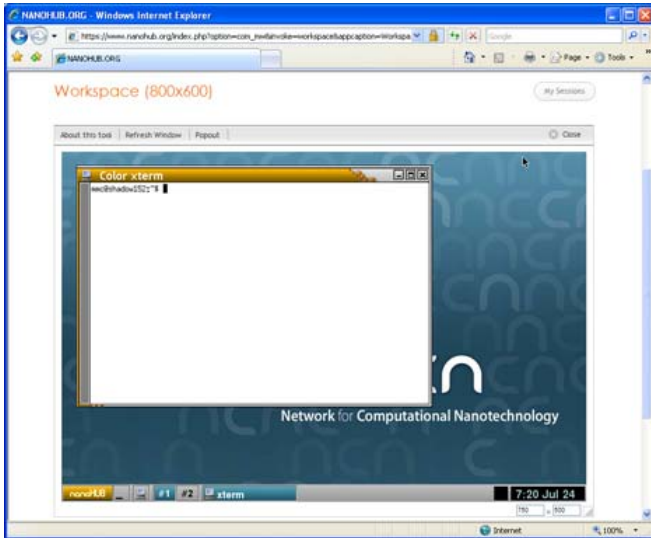


your code

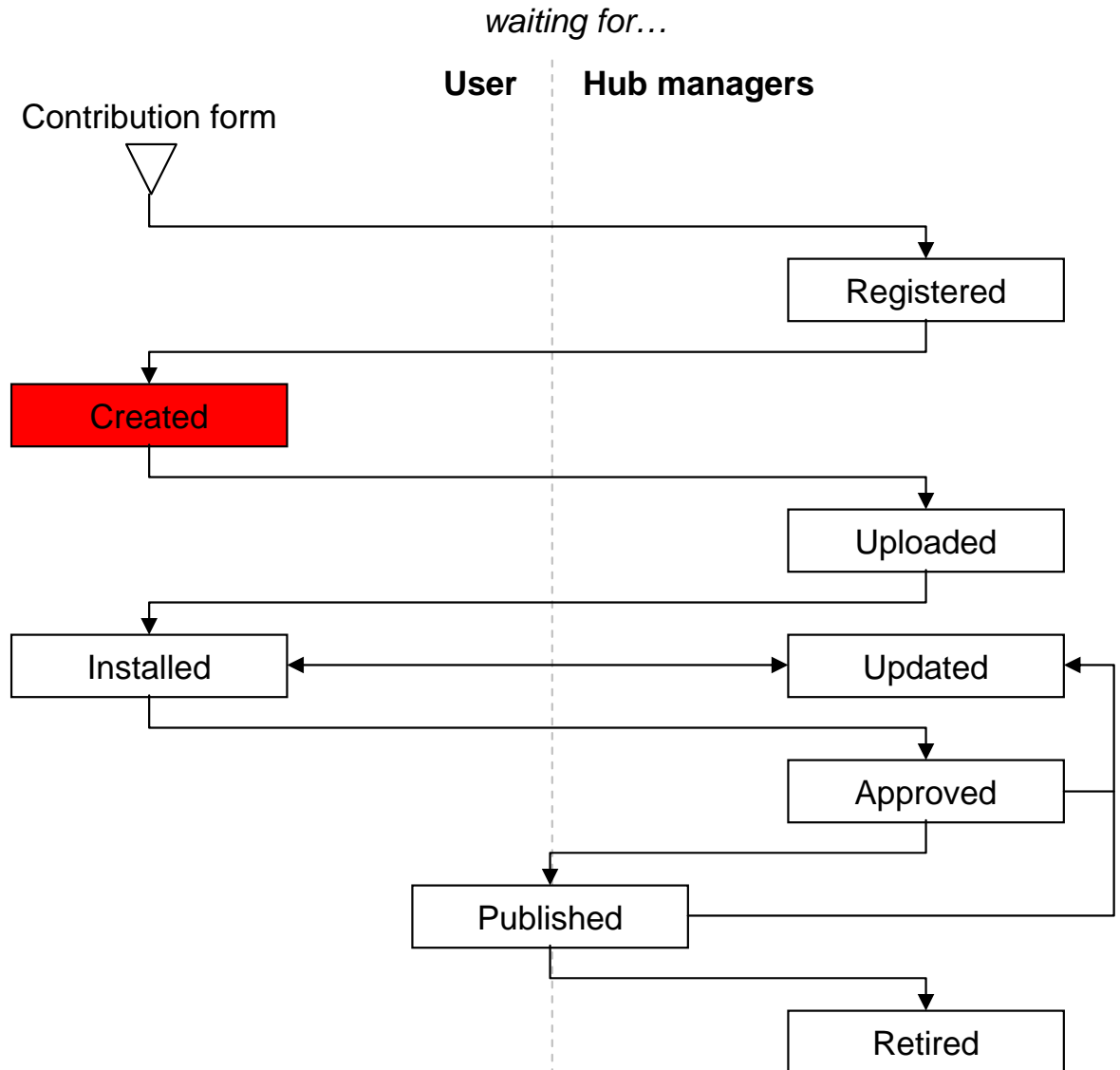




# Uploading your code



Upload your code into a hub workspace. Compile, test, and commit changes back to your Subversion repository.



# Uploading your code

Tool status page:  
<http://yourhub.org/contribtool>

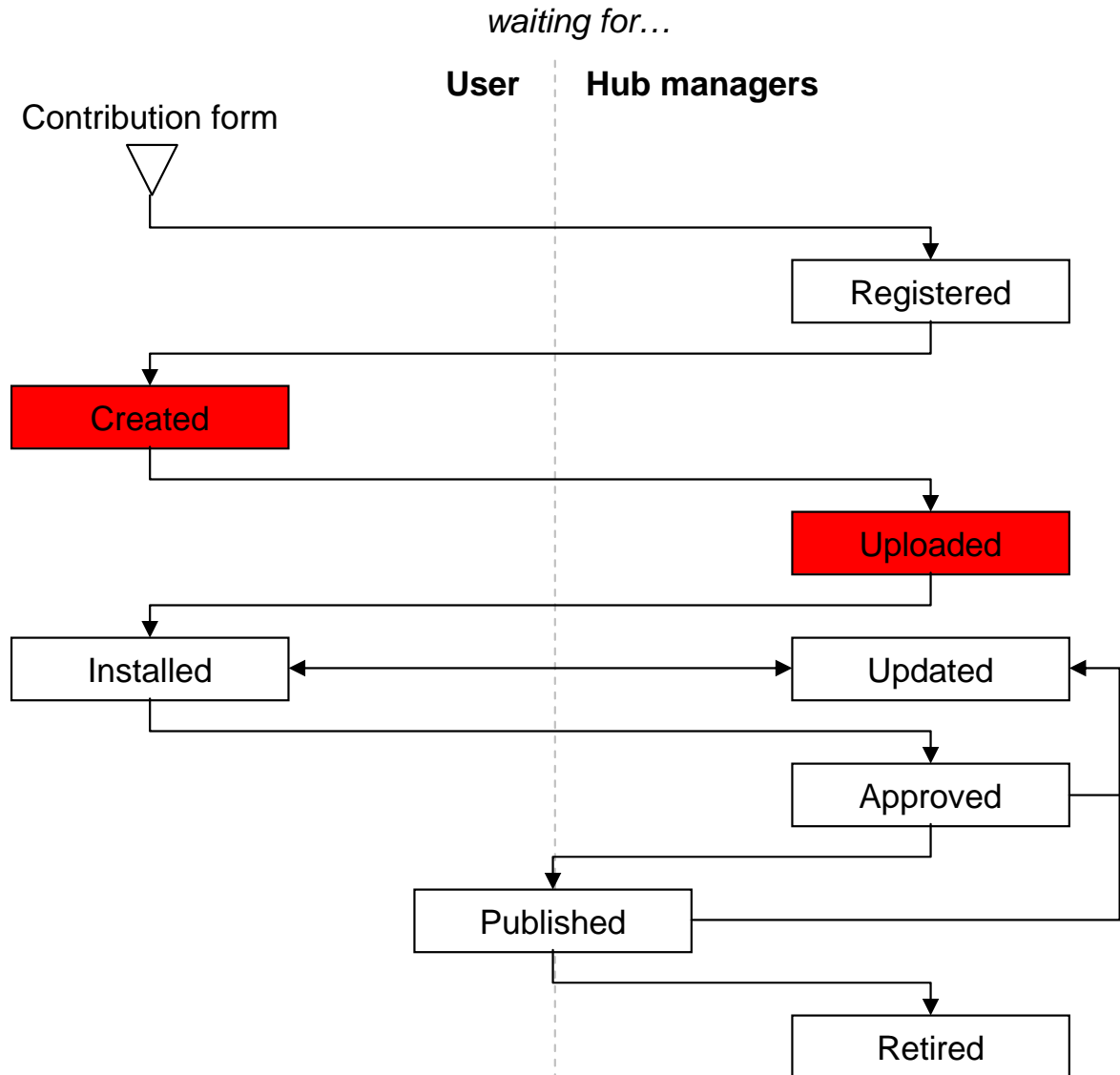
### We are waiting for You

Once your source code has been uploaded into your project area, click here to let us know:

➔ [My code has been uploaded](#)

**Remaining steps before we can publish your tool:**

- Register your tool on the nanoHUB.org
- Upload your source code [I've done this](#)
- ➔ [Make the page that describes your tool. Create this page...](#)
- Test and approve your tool
- Publish your tool so that others can see it on the nanoHUB.org



# Testing your tool

## What's next?

Your latest code is installed and ready on nanoHUB. Please test your tool by clicking the button below to ensure that everything is working properly, as well as to make sure that the page describing your tool is created with the correct information:

➔ Test your application:

**Launch tool** ➔

➔ [Review the page describing your tool](#)

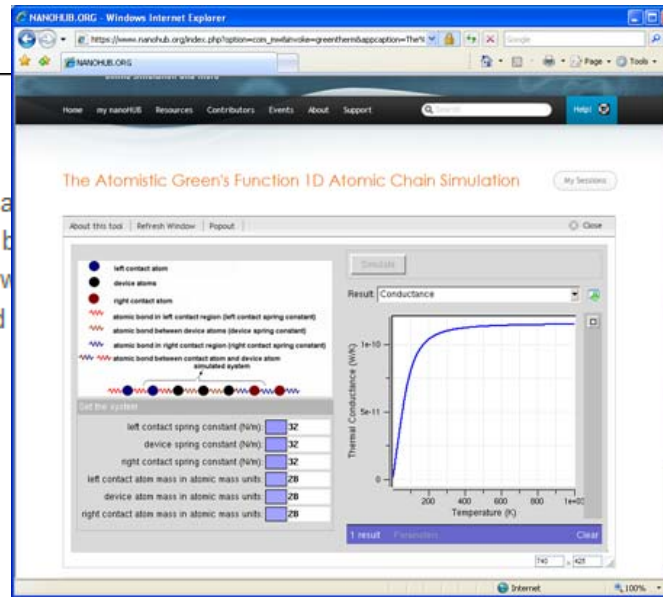
## We are waiting for You

Once you tested your tool and verified that it is working properly, click here to let us know:

➔ [My tool is working properly. I approve it.](#)

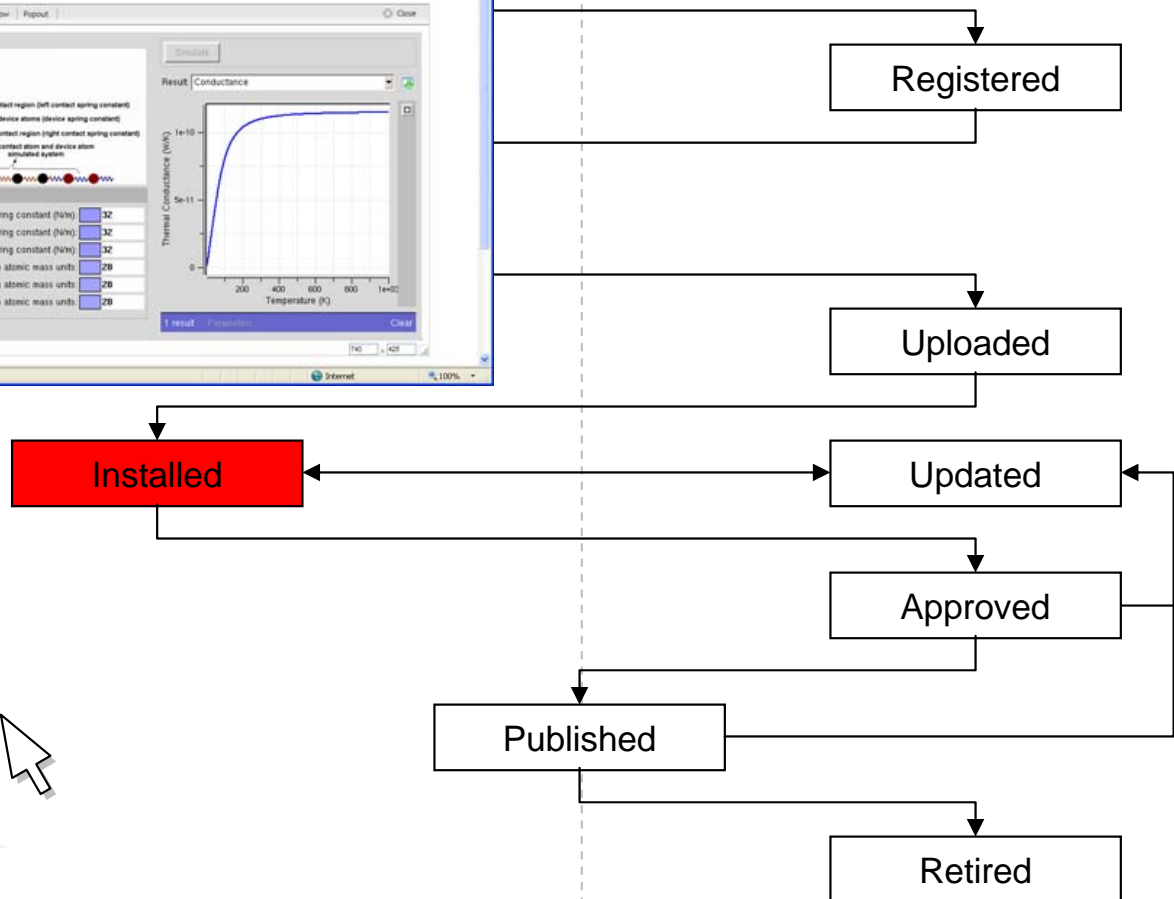
Need to make changes? Once you've checked in your latest fixes, click here to let us know:

➔ [I've fixed my code. Please install the latest updates.](#)



waiting for...

user | Hub managers



# Testing your tool

## What's next?

Your latest code is installed and ready on nanoHUB.org. Please test your tool by clicking the button below to make sure that everything is working properly, as well as verify that the page describing your tool is created and displays correct information:

➔ Test your application:

**Launch tool** →

➔ [Review the page describing your tool](#)

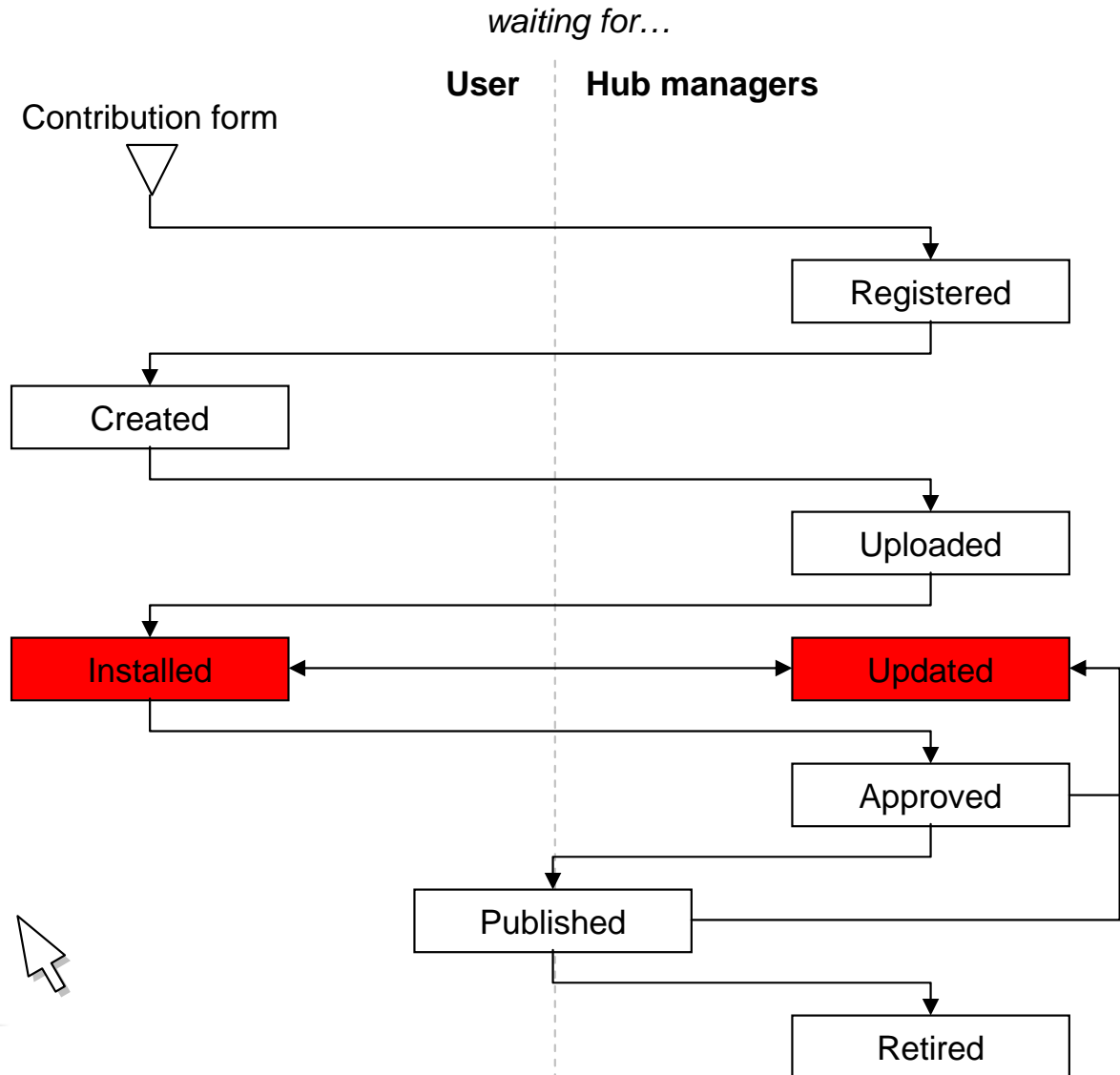
## We are waiting for You

Once you tested your tool and verified that it is working properly, click here to let us know:

➔ [My tool is working properly. I approve it.](#)

Need to make changes? Once you've checked in your latest fixes, click here to let us know:

➔ [I've fixed my code. Please install the latest updates.](#)

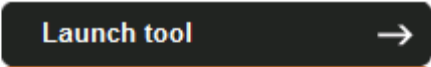


# Need help?

## What's next?

Your latest code is installed and ready on nanoHUB.org. Please test your tool by clicking the button below to make sure that everything is working properly, as well as verify that the page describing your tool is created and displays correct information:

→ Test your application:



→ [Review the page describing your tool](#)

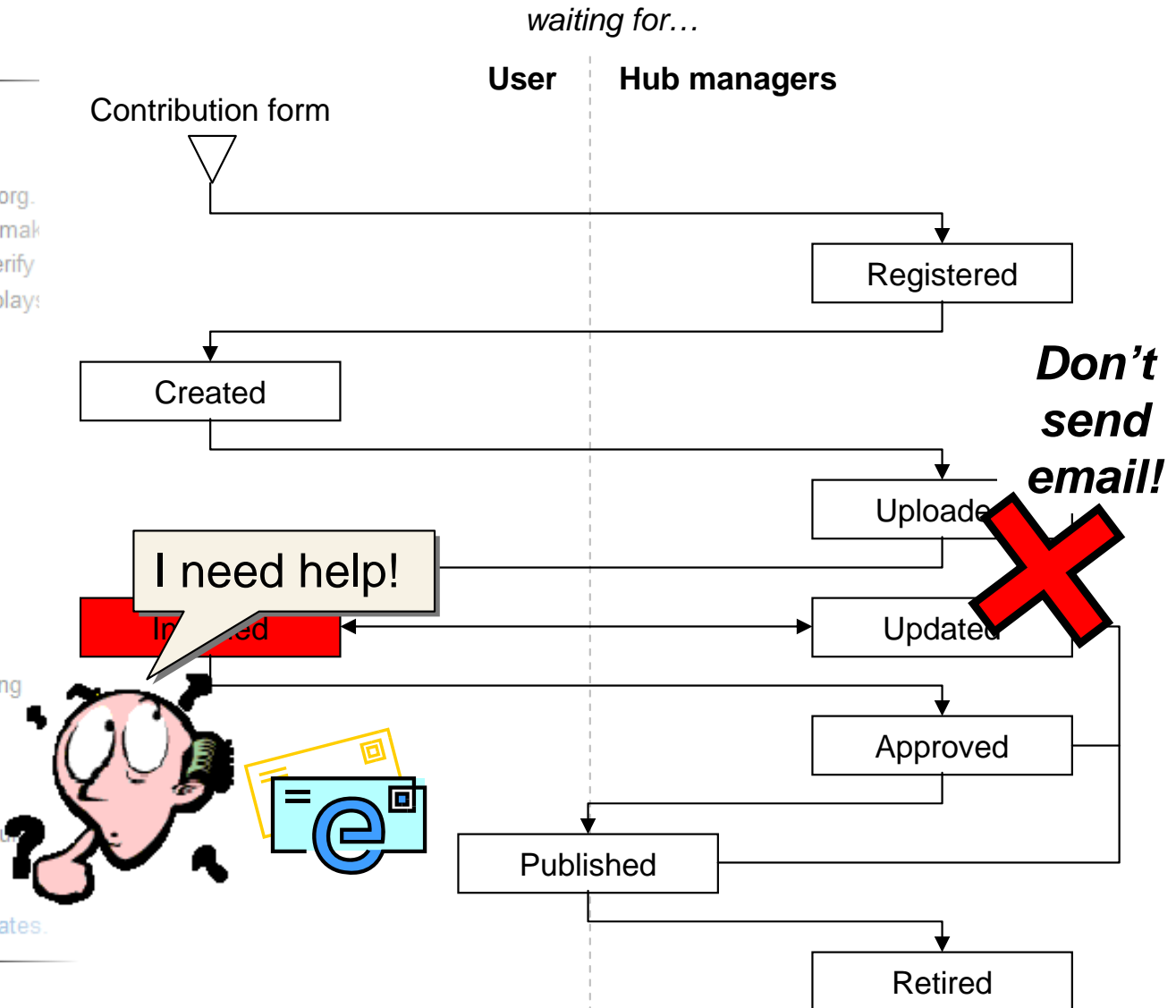
## We are waiting for You

Once you tested your tool and verified that it is working properly, click here to let us know:

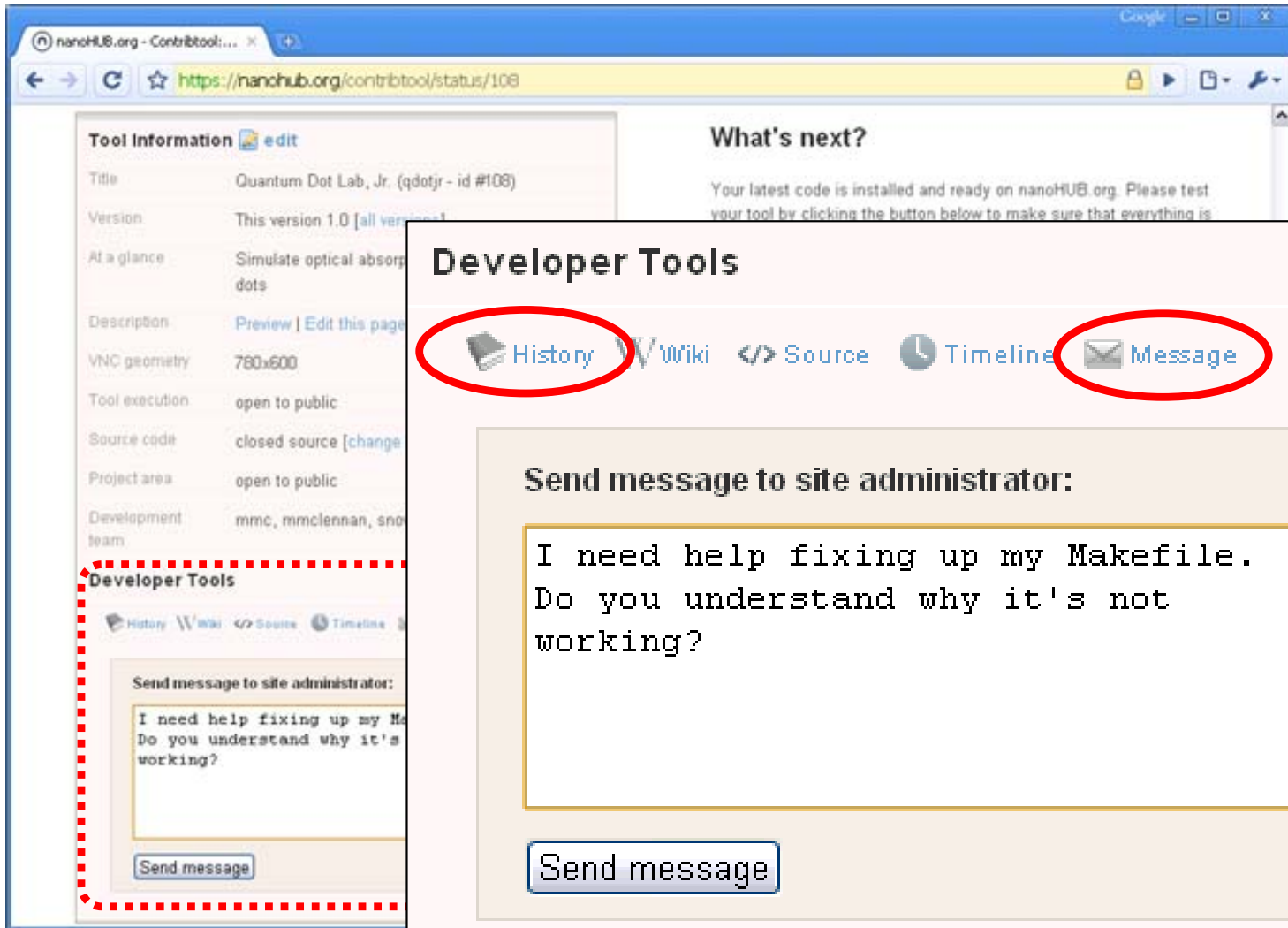
→ [My tool is working properly. I approve it.](#)

Need to make changes? Once you've checked in your latest fixes, click here to let us know:

→ [I've fixed my code. Please install the latest updates.](#)



# Use the web interface to communicate



Message goes to the whole team, and is stored in the history

# Testing your tool—again

## What's next?

Your latest code is installed and ready on nanoHub. Please test your tool by clicking the button below to ensure that everything is working properly, as well as to make sure that the page describing your tool is created with the correct information:

➔ Test your application:

**Launch tool** ➔

➔ [Review the page describing your tool](#)

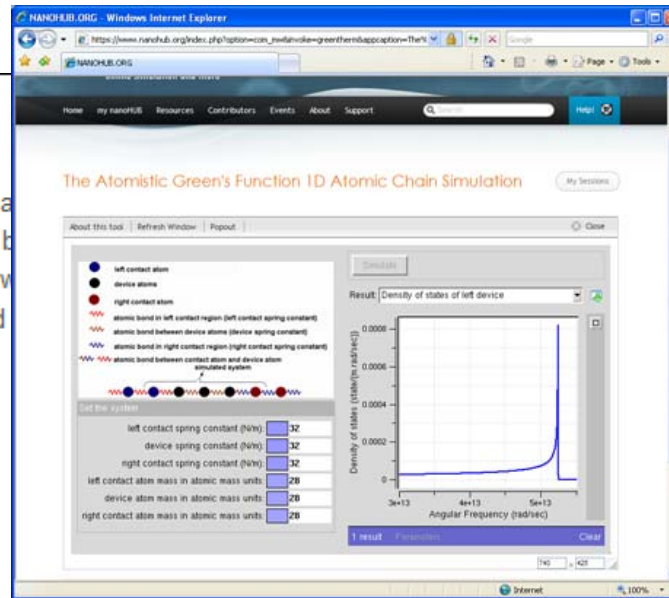
## We are waiting for You

Once you tested your tool and verified that it is working properly, click here to let us know:

➔ [My tool is working properly. I approve it.](#)

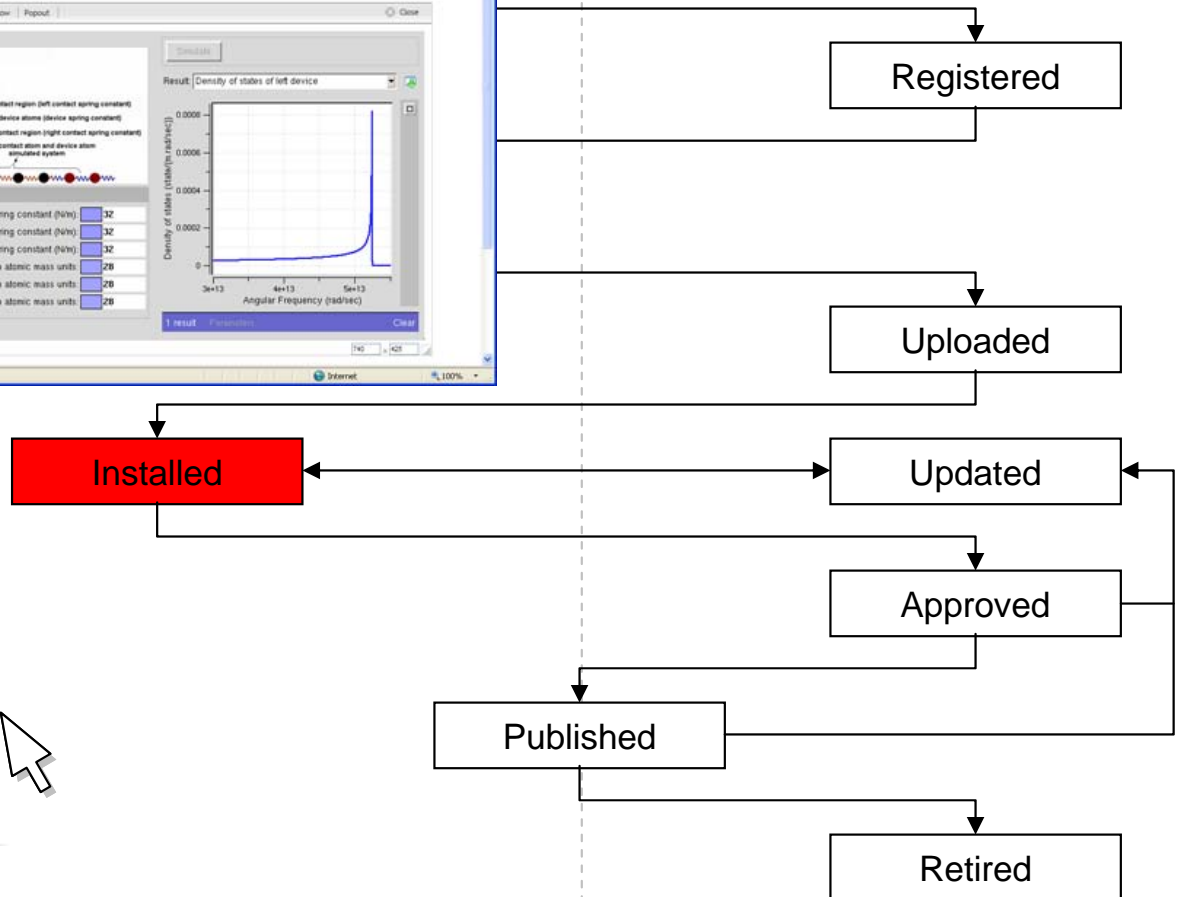
Need to make changes? Once you've checked in your latest fixes, click here to let us know:

➔ [I've fixed my code. Please install the latest updates.](#)



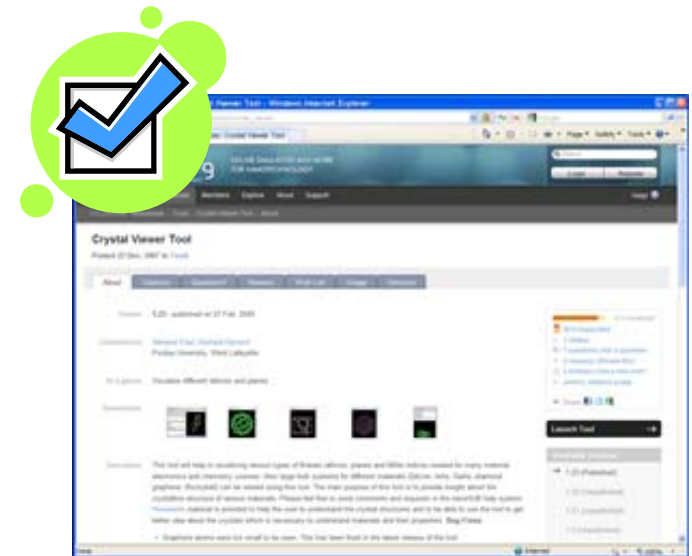
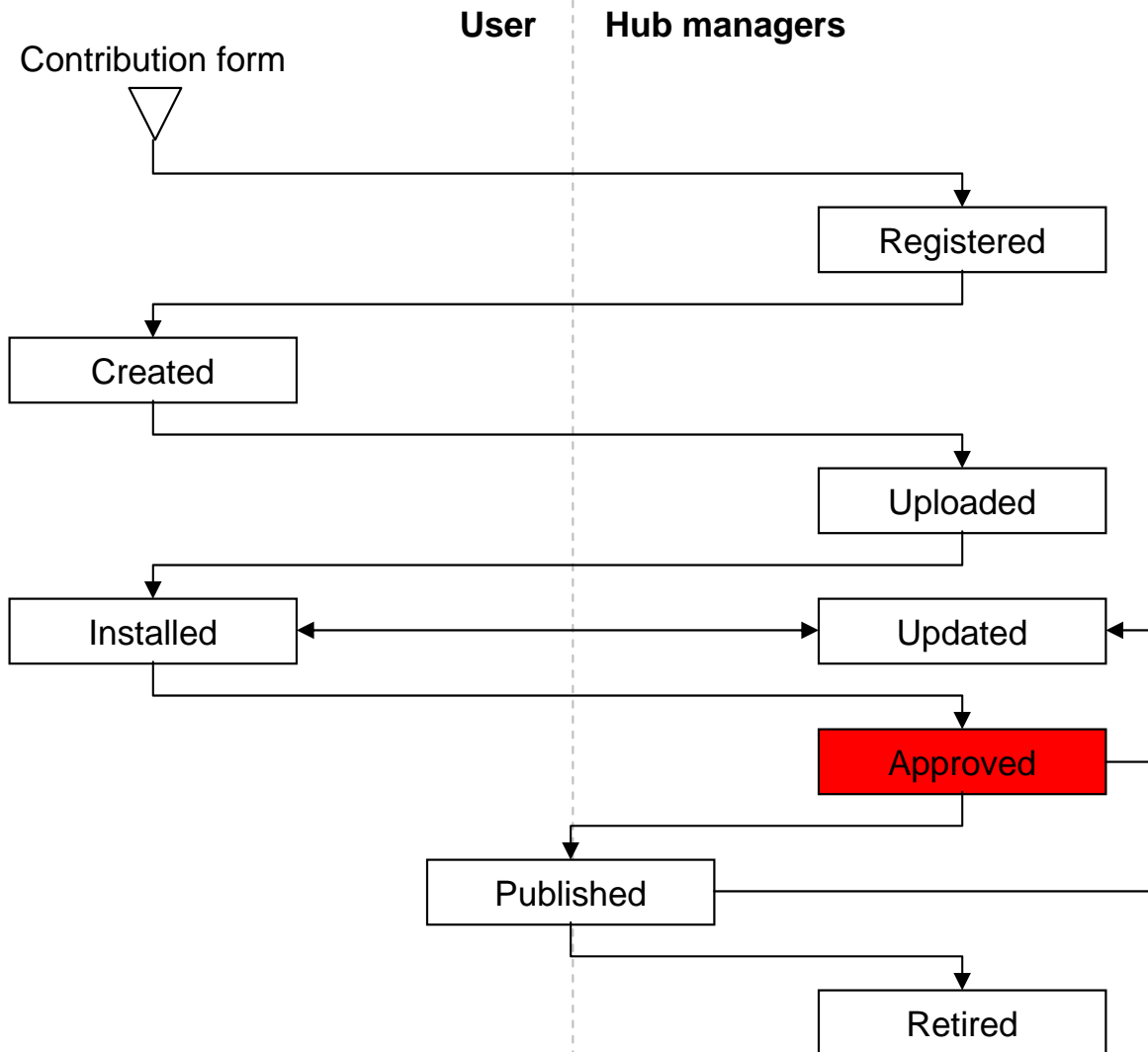
waiting for...

User Hub managers



# Last step...

*waiting for...*

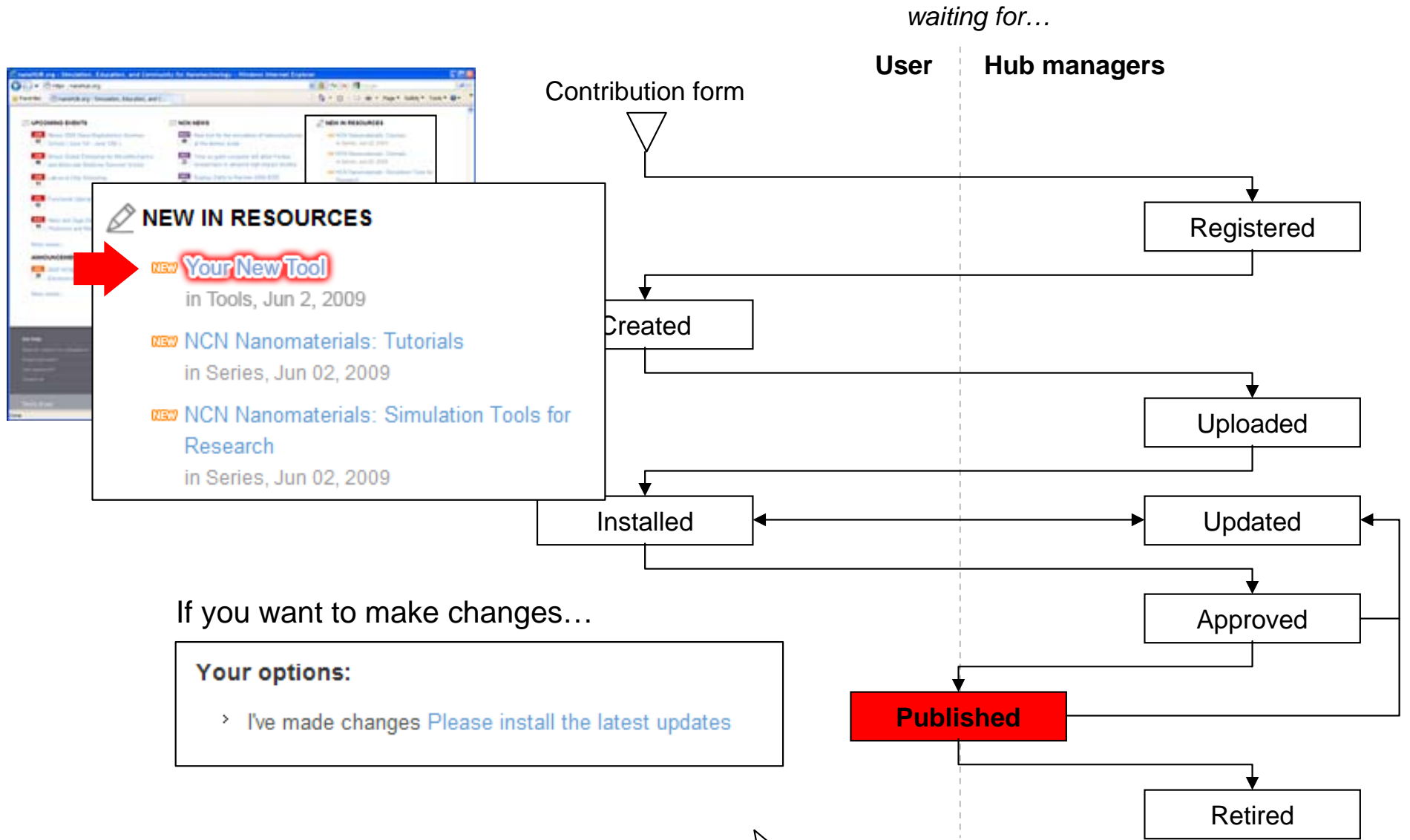


## Hub managers...

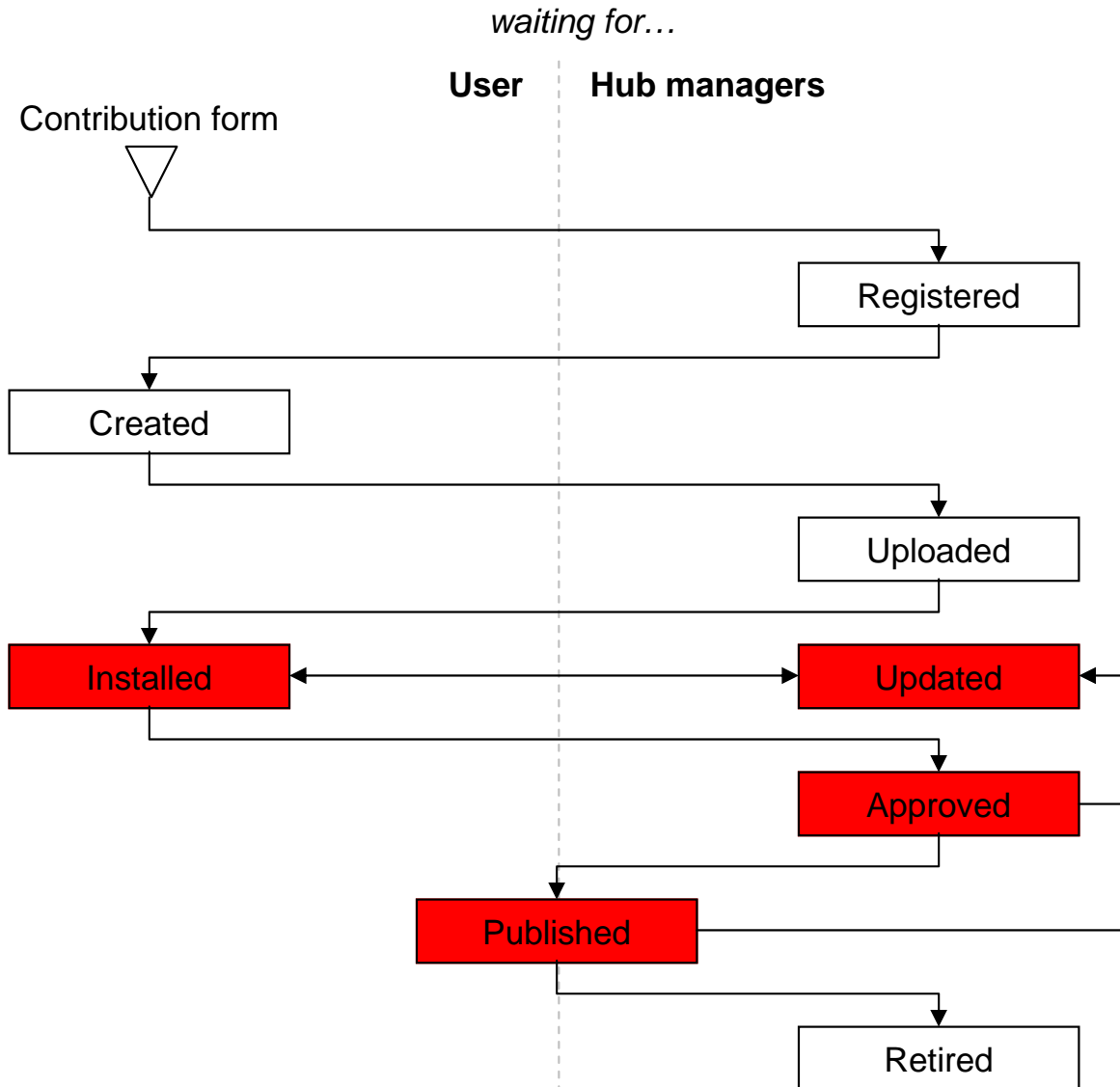
- Take one last look
- Make sure that the tool works
- Check the tool information page
- Then, publish your tool



# Your tool is published



# Updating your tool



Re-install your tool

*You approve it*

One last look

*Your changes are published*

# Become a Contributor

*Don't let your code gather dust on the shelf. Get it out there!*

Upload your own:

- Tools
- Tutorials