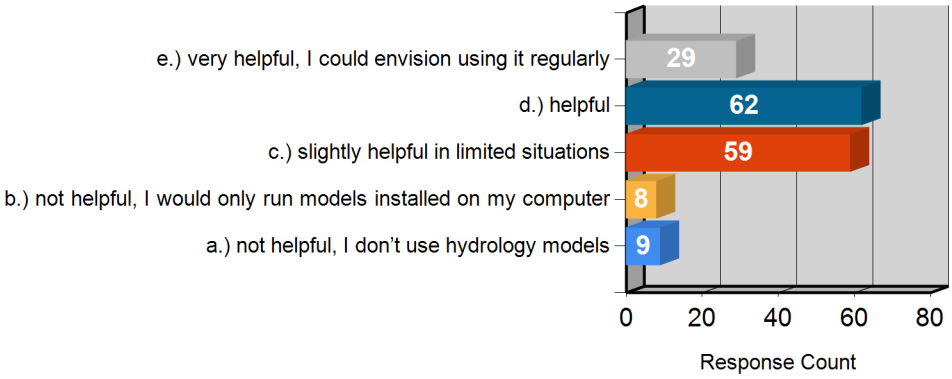
HydroHUB Initial Interest Survey

Survey conducted
June 19, 2009 through July 8, 2009

by the

Consortium of Universities for the Advancement of
Hydrologic Science, Inc.
(CUAHSI)

To what extent would the ability to run hydrologic codes from a browser be helpful to you?



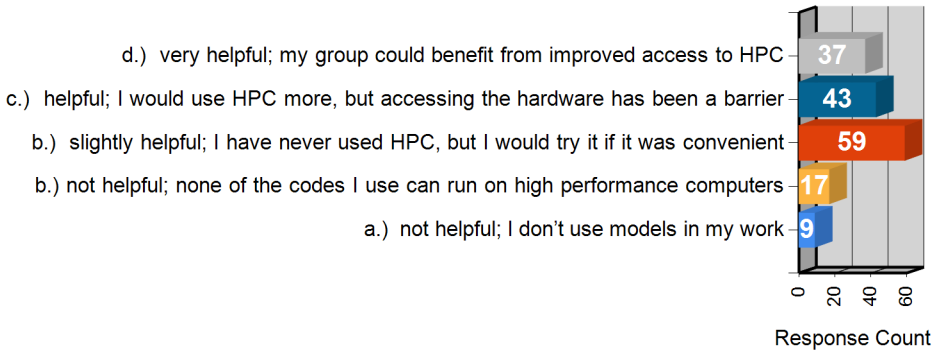
Total Respondents: 167

Total Skipped: 0

	Choice	Response Percent	Response Total
1	a.) not helpful, I don't use hydrology models	5.39 %	9
2	b.) not helpful, I would only run models installed on my computer	4.79 %	8
3	c.) slightly helpful in limited situations	35.33 %	59
4	d.) helpful	37.13 %	62
5	e.) very helpful, I could envision using it regularly	17.37 %	29

Analytics	
Mean	3.563
Standard Deviation	1.006
Standard Error	0.078
Variance	1.013

How would improvements in your access to high performance computing resources help you professionally?



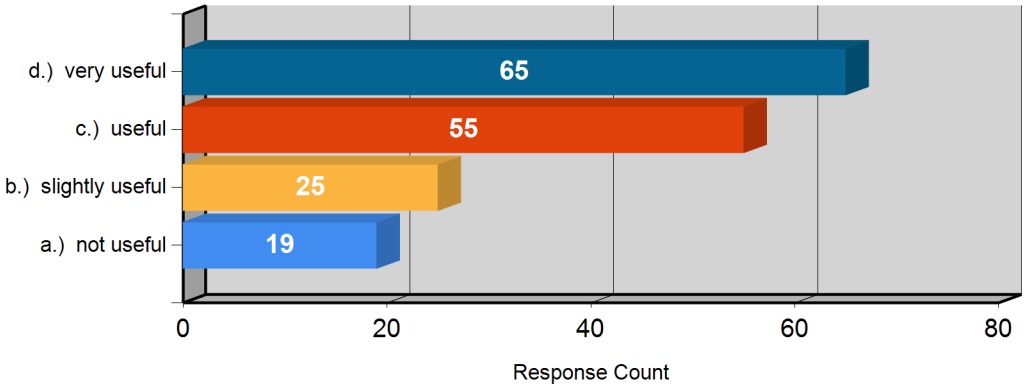
Total Respondents: 165

Total Skipped: 2

	Choice	Response Percent	Response Total
1	a.) not helpful; I don't use models in my work	5.45 %	9
2	b.) not helpful; none of the codes I use can run on high performance computers	10.30 %	17
3	b.) slightly helpful; I have never used HPC, but I would try it if it was convenient	35.76 %	59
4	c.) helpful; I would use HPC more, but accessing the hardware has been a barrier	26.06 %	43
5	d.) very helpful; my group could benefit from improved access to HPC	22.42 %	37

Analytics	
Mean	3.497
Standard Deviation	1.110
Standard Error	0.086
Variance	1.232

Would software that was made available in this way be useful to your teaching?



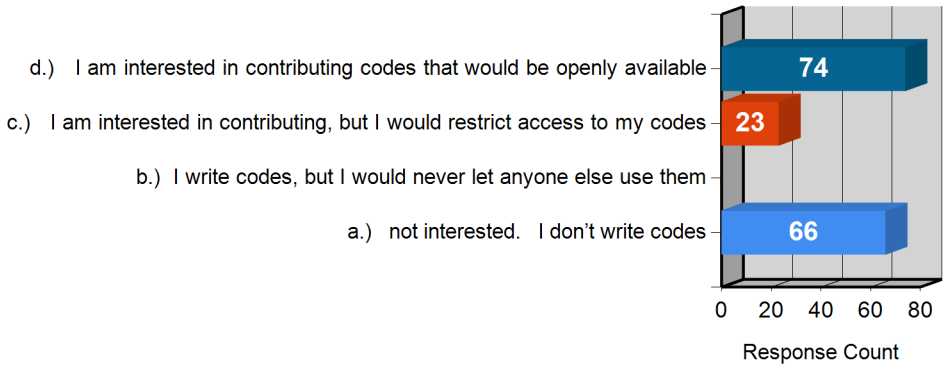
Total Respondents: 164

Total Skipped: 3

	Choice	Response Percent	Response Total
1	a.) not useful	11.59 %	19
2	b.) slightly useful	15.24 %	25
3	c.) useful	33.54 %	55
4	d.) very useful	39.63 %	65

Analytics	
Mean	3.012
Standard Deviation	1.006
Standard Error	0.079
Variance	1.012

Would you consider contributing your codes to this site?



Total Respondents: 163

Total Skipped: 4

	Choice	Response Percent	Response Total
1	a.) not interested. I don't write codes	40.49 %	66
2	b.) I write codes, but I would never let anyone else use them	0.00 %	0
3	c.) I am interested in contributing, but I would restrict access to my codes	14.11 %	23
4	d.) I am interested in contributing codes that would be openly available	45.40 %	74

Analytics	
Mean	2.644
Standard Deviation	1.395
Standard Error	0.109
Variance	1.947

Comments about Running and Contributing Models:

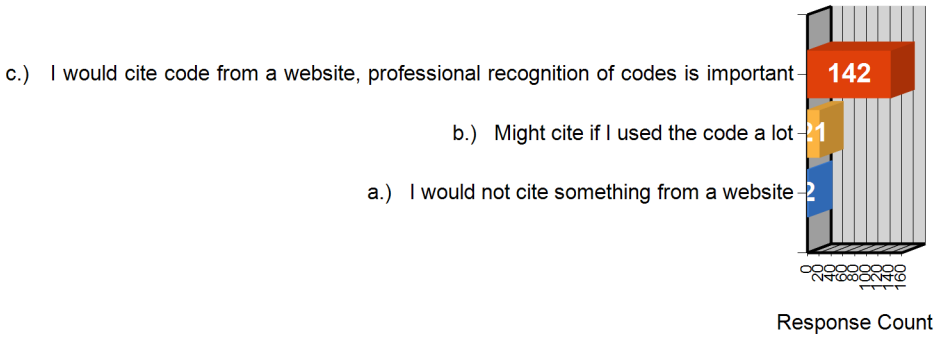
Total Respondents	29
Total Skipped	138

#	Response Number	Respondent Name	Response
1	1819246		I work for a state agency and use regional flow models to evaluate withdrawal impacts. We have recently been forced into a state-wide contract for IT services that completely constrains our selection of hardware and transactions through the firewall. I can see how this proposal might be a good work around for the contractor constraints but I can also see how the users "portal" may completely frustrate the intent of the site. I also worry about the proliferation of technically deficient model users ....
2	1819331		I think that this is a critical step toward increasing openness and compatibility among hydrologic codes.
3	1819428		Open source would be best
4	1819542		I write codes, but let few people use them and would not want to deal with the endless questions this access could generate.
5	1819698		It is important to maintain transparency and make sure models are sued as "truth telling" black boxes that anyone can just plug into. So there is both hope and risk in this project.
6	1819749		I would be interested in contributing the NASA Land Information System (LIS; http://lis.gsfc.nasa.gov). This code requires several independent libraries that would also need to be supported on HydroHUB, such as ESMF, NetCDF, GRIB, HDF-EOS, etc.
7	1820063		I have answered useful/very useful or interested/very interested to all the above questions, because in concept these ideas are very useful. However how they are implemented and work will be crucial to whether they are really useful and whether I really use them in research and teaching. Pulling off the balance bewteen functionality and simplicity will be the toughest part of this.
8	1820136		I've used A LOT of research codes. This works best when you have a personal relationship with the developer, not when you are an anonymous user in a network. This aspect doesn't seem practical to me.
9	1820280		I believe that an important issue about running codes is NOT whether codes can be made available to others, but whether codes have been adequately tested. Many academic and even agency codes has errors and most have never been thoroughly tested to ensure that they correctly do the computations as intended. Something that would then have value would be to have persons submit their codes for critical testing by selected professional community. This would mean that source codes would need to be made available and this would raise potential issues regarding ownership and proper authorship citations. Once a submitted code has been thoroughly tested then it could migrate to a place for the larger community to use.
10	1820333		As all modelers know the devil is in the input and output. To make models useful pre and post processing should be made as userfriendly as possible. Generally, that is only possible for commercial codes because it requires a lot of work. Although I would contribute open source code, I am not sure I would make the effort to make it user friendly
11	1820454		If I did write codes I would contribute them to HydroHUB
12	1822172		To your section "Run codes on supercomputers" on the previous page, I did not answer because none of the answers apply to me. I use HPC all day long, but would find limited utility in a web interface as I find it easier and faster to submit the jobs on my own. There is more flexbility.
13	1825059		The codes i have are for optimization for parameter estimation based on data and for uncertainty analysis. Some codes are linked to SWAT, but others would require the user write an interface file between out codes and hydrology simulators. I don't know if this would work under your system.
14	1826017		I am not presently writing any codes but if I did in the future I would happy to share them. Also, reviews of software and limitations would be very helpful

15	1828422		If someone else uses the code that I put on the HUB, how can I guarantee that they will give me credit in publications, etc?
16	1828704		My main concern about codes that are run over the internet is the necessarily "black box" nature of the models. As models get more complicated, wide distribution of untested models in the hands of naive users is a recipe for poor science.
17	1829150		The web interface does not seem very appealing to me. I can imagine how this could be useful for complex simulations of high-performance platforms, but that does not have to be on the web. For other models I would rather have it downloaded to explore and probably adapt to my particular needs.
18	1829244		I imagine it would take a pretty sophisticated architecture to allow arbitrary models to be run remotely. Are there standards that a modeler would need to implement in order to make their model accessible through the site?
19	1830894		I think I could provide some codes to be freely used and some with restrictions
20	1833153		I would also suggest that there was a way and effort to make contributing models and codes CSDMS and OpenMI compliant.
21	1839882		While I am interested to contribute open-access code, I don't do a lot of coding.
22	1842464		Access to supercomputing needs to be clarified. few models actually require a parallel environment, and users with relevant expertise probably already have sufficient access. I would be surprised if access to CPU cycles is a significant need. The previous question about access to computing cycles was poorly worded - the inclusion of both an answer and a reason did not support many reasonable answers. For me, possible reasons differed from mine. so I left the question blank.
23	1843089		MODFLOW would be great - - we also have AGWA modeling that we have been trying to set up to run from our computers (I am the MODFLOW person and am only marginally involved in AGWA so I may be miss-speaking....) so I do see a great opportunity to work with you on AGWA. And hopefully you are already considering MODFLOW!
24	1843147		I don't write codes, but I'd love to try out codes contributed by others.
25	1846267		Matlab scripts - is that considered codes? If so, certainly yes, here there could be a big market for sharing codes/scripts.
26	1846316		This is a great idea about sharing codes, which could expedite researech progress, expand research ideas, and improve teaching and education. I (Frank Tsai) am mainly working on groundwater inverse modeling and model uncertainty analysis. I would be more than happy to share my codes to other users.

27	1854187		The concept is great and I support it 100% as long as the developers of this site accept proper responsibility for the site. For example, I am not sure if this is the only place to contribute comments, but I have yet to see a question that deals with the seamless linkage protocols of models and databases. If one contributes models to this web site, what are the responsibilities of the web site? For example, does the web site promote push or pull technology? What if my model was designed for push technology, what does the system do to address this? What are expectations of having complete datasets available from upstream models to feed downstream model input requirements? How does the "framework or system" handle units, error and warnings, different compilers, different languages, etc.? How does the system handle disparate, legacy codes? What functionality or responsibility does the system provide for dynamic feedback between models? How does it deal with two sets of inputs (say from two different models) where some of the same data overlap and conflict? How does the system handle spatial (e.g., curvilinear boundary communicating with a planar boundary; nodes that are not synchronized) and temporal [different definition of time steps (e.g., step-function versus point-in-time), different time steps (e.g., regular versus irregular; large versus very small), etc.)] inconsistencies? How does the system register input and output parameters, and register the model (e.g., Is it a groundwater model, an eco-model, or if it contains both, where does it get registered?)? Do you handle analytical, empirical, numerical, heuristic, etc. models and their linkages? For the numerical models in particular, what responsibility do you accept to feed the beast; do you provide help with automated data retrieval systems for access to standard nationally maintained web sites? How do you deal with boundary conditions between models that potentially conflict due to the size of the numerical descretization? Where are the terabytes of data stored? Can multiple people access the same model and run it at the same time? How do you support CSM development, linkage protocol, output displays, etc.? How do you ensure that the CSM does not violate the design of the model? My questions are endless. The bottom line is that the system, web site, web portal, or whatever it is called must accept a certain degree of responsibility such that when I submit models I can be assured that the system will properly linked them, then implemented them in a manner that is consistent within reason. The key is that we (as modelers) are in charge of the "boxes" (i.e., models) that are linked, but it is the system that is in charge of the arrows that link the boxes. So, what does it mean to be in charge of an arrow? The site is not of particular use to me if the modeler is responsible for the arrows as well as the boxes. If I am responsible for both, then the site is really only a site that is useful to those who initially built the site to cater to their models, unless I have missed something. Again, I support the concept 100%, but the devil is in the details. One cannot honestly answer whether they would use the site until the sites clearly articulates its responsibilities versus those of the model developer, who is contributing to the site.
28	1855852		I would be willing to contribute codes to predict geophysical responses based on the output of hydrologic models.
29	1862009		I might use the HPC capability, but I have ready access to some already, and do a fair amount of modeling, I might contribute code but restrictions would depend on the code. These survey questions seem poorly constructed because they do not include all permutations and force the respondent into making untrue statements. This is annoying. The question whether one would use the proposed web-based functions and why is different than whether one already has access to this kind of technology and whether one models at all.

Would you be willing cite hydrology codes that you used on a web site?



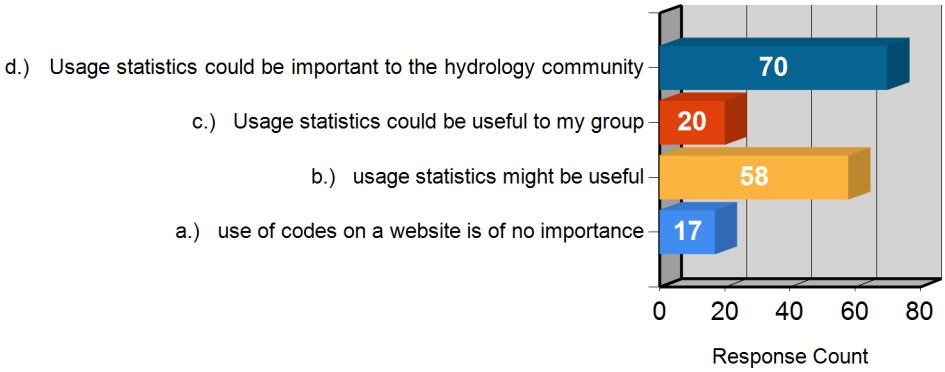
Total Respondents: 165

Total Skipped: 2

	Choice	Response Percent	Response Total
1	a.) I would not cite something from a website	1.21 %	2
2	b.) Might cite if I used the code a lot	12.73 %	21
3	c.) I would cite code from a website, professional recognition of codes is important	86.06 %	142

Analytics	
Mean	2.848
Standard Deviation	0.391
Standard Error	0.030
Variance	0.153

How important would having access to statistics describing the number of users, location of users, time of use, number of runs, CPU time, etc. be to you?

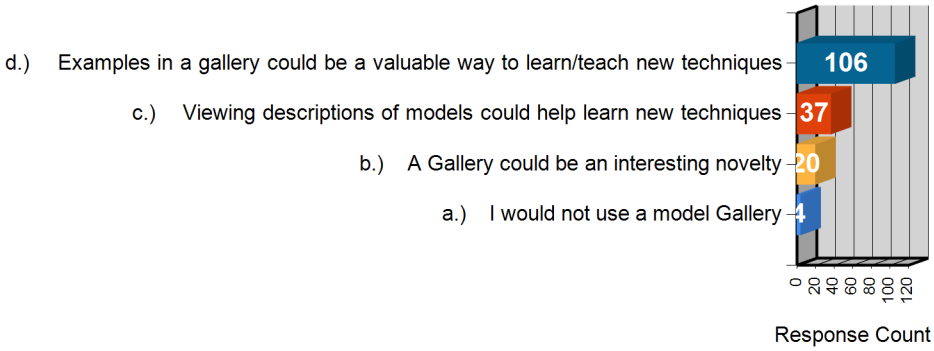


Total Respondents: 165
Total Skipped: 2

	Choice	Response Percent	Response Total
1	a.) use of codes on a website is of no importance	10.30 %	17
2	b.) usage statistics might be useful	35.15 %	58
3	c.) Usage statistics could be useful to my group	12.12 %	20
4	d.) Usage statistics could be important to the hydrology community	42.42 %	70

Analytics	
Mean	2.867
Standard Deviation	1.082
Standard Error	0.084
Variance	1.170

To what extent could this type of model gallery be useful as a learning and teaching tool?



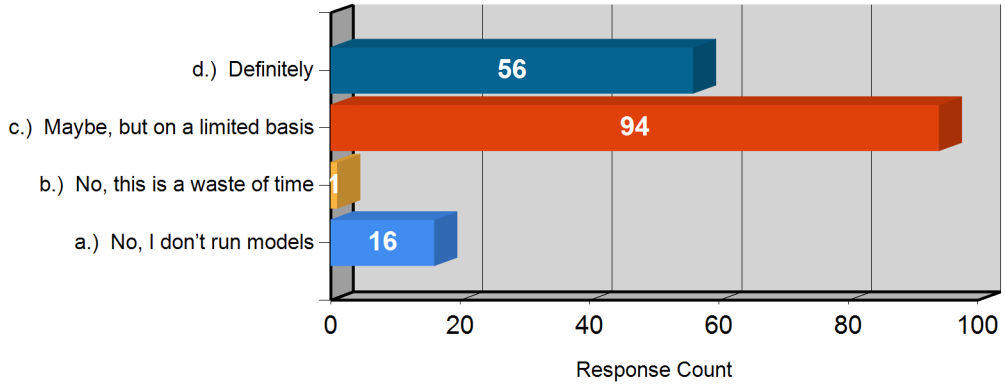
Total Respondents: 167

Total Skipped: 0

	Choice	Response Percent	Response Total
1	a.) I would not use a model Gallery	2.40 %	4
2	b.) A Gallery could be an interesting novelty	11.98 %	20
3	c.) Viewing descriptions of models could help learn new techniques	22.16 %	37
4	d.) Examples in a gallery could be a valuable way to learn/teach new techniques	63.47 %	106

Analytics	
Mean	3.467
Standard Deviation	0.795
Standard Error	0.062
Variance	0.632

Would you consider contributing to a model gallery?



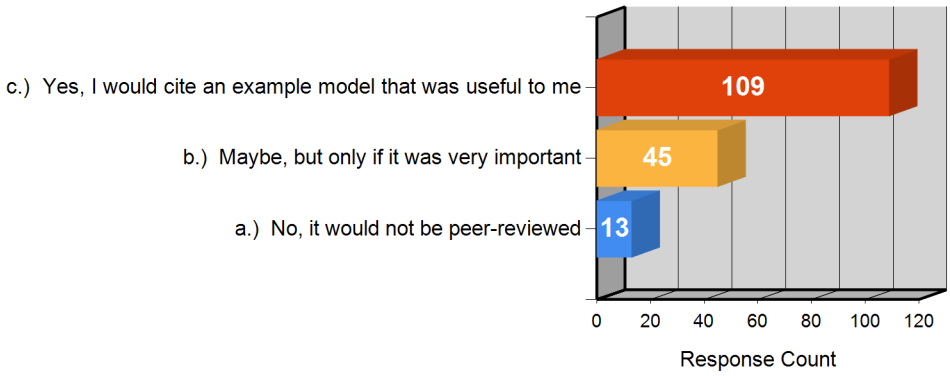
Total Respondents: 167

Total Skipped: 0

	Choice	Response Percent	Response Total
1	a.) No, I don't run models	9.58 %	16
2	b.) No, this is a waste of time	0.60 %	1
3	c.) Maybe, but on a limited basis	56.29 %	94
4	d.) Definitely	33.53 %	56

Analytics	
Mean	3.138
Standard Deviation	0.840
Standard Error	0.065
Variance	0.706

Would you consider citing an example model?



Total Respondents: 167

Total Skipped: 0

	Choice	Response Percent	Response Total
1	a.) No, it would not be peer-reviewed	7.78 %	13
2	b.) Maybe, but only if it was very important	26.95 %	45
3	c.) Yes, I would cite an example model that was useful to me	65.27 %	109

Analytics	
Mean	2.575
Standard Deviation	0.633
Standard Error	0.049
Variance	0.400

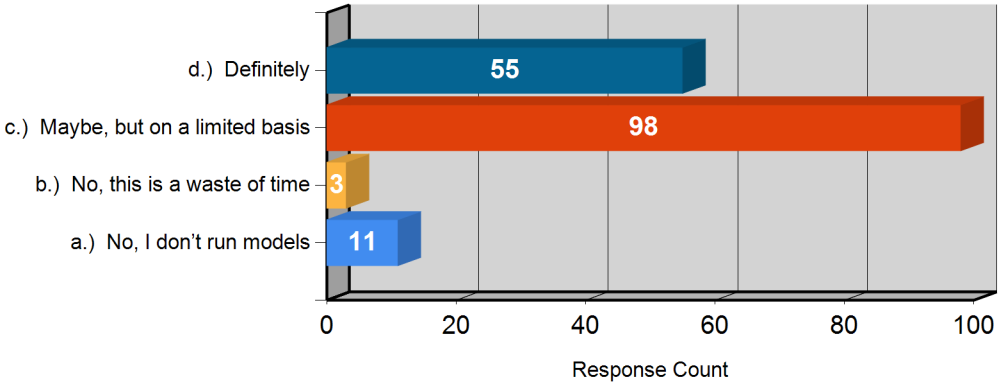
Comments about Model Gallery:

Total Respondents	20
Total Skipped	147

#	Response Number	Respondent Name	Response
1	1819428		great idea
2	1819542		Like tutorials that already exist?
3	1819749		On the LIS (http://lis.gsfc.nasa.gov) code repository we have test cases that include config files, inputs, and sample outputs. These are quite valuable to newer users of LIS. I recommend something similar for each code--esp. as code complexity increases.
4	1820063		Again - these are very nice concepts, but the devil is in the details and pulling it off right is critical to this actually being used.
5	1820136		I see this primarily as a teaaching tool rather than a research tool, so the citation issue isn't as relevant.
6	1820280		To be at all useful, models in the "model gallery" would need to be rigiorously tested to ensure that they correctly perform the intended computations. This would involve thorough testing of output against analytical solutions. Academics are typcially NOT trained to write "prodcution code". You should ask coding professionals at the USACE Hydrologic Engineering Center about this important topic. Making inadequately tested and poorly documented models available to a wide community would NOT be helpful, rather I fear it would encourage the potential propagation of erroneous results.
7	1820466		This could be a very useful teaching tool.
8	1822172		The main issue with a Model Gallery is how to keep everything up-to-date. Leading edge models are constantly evolving and keeping webpages up to date can be a nuisance.
9	1825059		We have a range of example models from very simple to very complex. I would probably only want to post the simpler models, but that could be useful to others.
10	1826017		Again, I am not currently modelling but have in the past. I hope to publish a paper soon that details issues and approach to my hydrodynamic model
11	1828422		Great Idea If the size of the gallery grows, it is important to organize all the examples to allow user to quickly hone in on their particular need
12	1828704		This aspect could be very valuable to getting new students started with software. It is also likely to be good for tracking whether different versions of software get different results (which is common).
13	1829150		Sounds good, but why duplicate what's already available from CSDMS, for example?
14	1830564		If the example model was peer-reviewed/published, I would consider citing it.
15	1833153		In terms of citing, it might be worth finding if there is a reasonably respectable peer-reviewed journal from either hydrology or something like Computers in Geosciences that might be willing to partner with CUAHSI and have a special article submission type for models and software. This way the software and models would still go through a peer review process, in addition to just a loose web-comment/forum rating system. I think you'd get more contributions if they could be cited as journal articles or minimally have a DOI for the models. In terms of contributions, it might be nice to have some that are stand-alone web applications of models versus others that are component based (e.g. CSDMS/OpenMI compliant) which users might build their own plug and play type models with different process representations.
16	1842738		Citing models or codes on the web would require that the model and code be deposited in a 'permanent' repository that would openly accessible for viewing and modification. Without that, we are stuck in the same proprietary, closed research code situation that we have now and this effort will not be useful.

17	1843089		I would be interested in seeing what other codes might be out there!!
18	1843735		I am VERY concerned that the HUB concept will facilitate the reckless use of models by individuals who know little or nothing about the fundamentals of hydrology, systems modeling, or numerics. The literature is already too full of papers that present a flurry of model results without any convincing insights into hydrological processes -- or any basis for believing that the model results are representative of the real world. And I say this as a *modeler* myself. We risk re-defining "hydrologic science" as just tossing together pre-packaged models and pre-packaged data sets. Any reasonably diligent teenager could do this kind of plug-and-play 'science lite'. Real process insight is much harder to come by.
19	1846267		Very good idea.
20	1854187		See my previous comments.

Would you be interested in viewing, or contributing input files for calibrated hydrologic models?



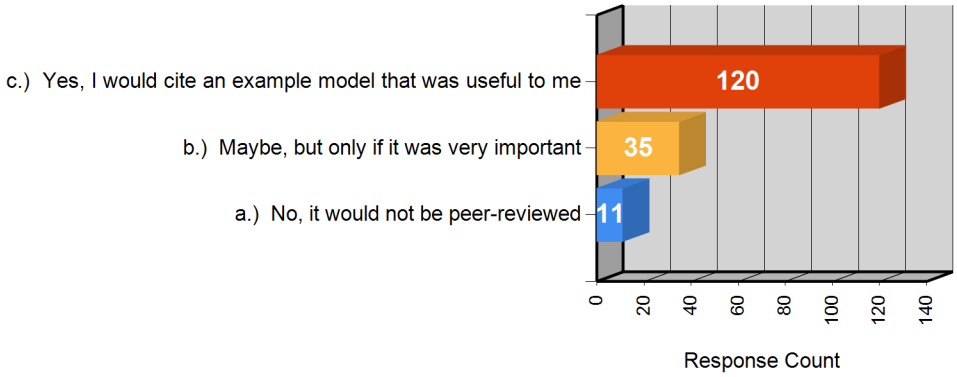
Total Respondents: 167

Total Skipped: 0

	Choice	Response Percent	Response Total
1	a.) No, I don't run models	6.59 %	11
2	b.) No, this is a waste of time	1.80 %	3
3	c.) Maybe, but on a limited basis	58.68 %	98
4	d.) Definitely	32.93 %	55

Analytics	
Mean	3.180
Standard Deviation	0.761
Standard Error	0.059
Variance	0.579

Would you cite a calibrated hydrologic model that you used to help you build another model?



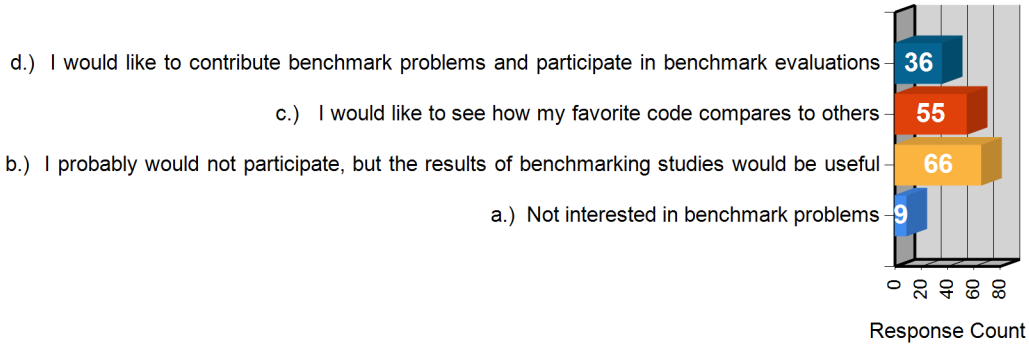
Total Respondents: 166

Total Skipped: 1

	Choice	Response Percent	Response Total
1	a.) No, it would not be peer-reviewed	6.63 %	11
2	b.) Maybe, but only if it was very important	21.08 %	35
3	c.) Yes, I would cite an example model that was useful to me	72.29 %	120

Analytics	
Mean	2.657
Standard Deviation	0.598
Standard Error	0.046
Variance	0.358

Would you be interested in benchmark evaluations of codes?



Total Respondents: 166

Total Skipped: 1

	Choice	Response Percent	Response Total
1	a.) Not interested in benchmark problems	5.42 %	9
2	b.) I probably would not participate, but the results of benchmarking studies would be useful	39.76 %	66
3	c.) I would like to see how my favorite code compares to others	33.13 %	55
4	d.) I would like to contribute benchmark problems and participate in benchmark evaluations	21.69 %	36

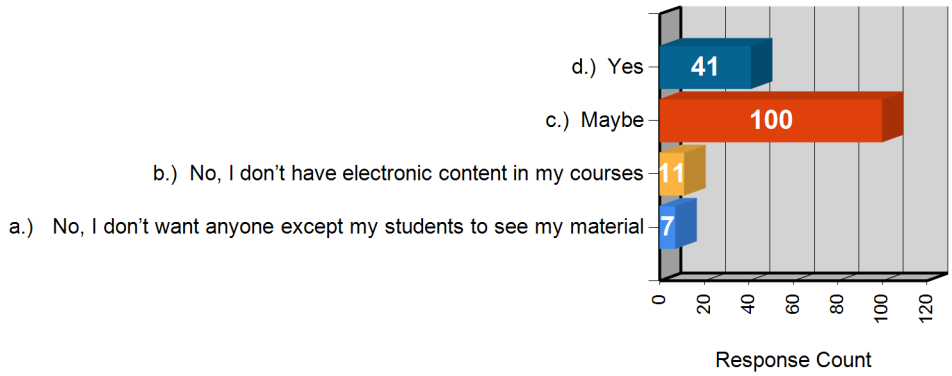
Analytics	
Mean	2.711
Standard Deviation	0.865
Standard Error	0.067
Variance	0.748

Comments about Benchmarking:

Total Respondents	17
Total Skipped	150

#	Response Number	Respondent Name	Response
1	1819331		This is something that has been lacking, and as a result comparisons between similar models are almost never apples-to-apples.
2	1819542		Benchmarking what - execution speed or matching observations?
3	1819610		The Consortium should promote development of calibration-free models.
4	1819749		Similar to previous comments. The land surface community has a long history of "benchmarking" through the PILPS experiments as well as GSWP. Any new LSM should go through these benchmarks. These are standard benchmarks supported by LIS.
5	1820063		The challenge with benchmarking is that it is only really useful to compare models designed to do exactly the same thing at the same scale with the same inputs and producing the same outputs. Many of the differences between hydrologic models is because they are designed for different problems with different inputs and outputs at different scales, for different questions. However just recognizing this and providing an organization into classes of problems that classes of models can address would be useful and may result from this exercise.
6	1820136		This effort would need a moderator or the examples could proliferate with poorly conceived problems. If you have to sort through "junk" the benchmarks wouldn't be useful.
7	1820280		Great care must be taken to establish a common suite ot performance metrics if model cross-comparisons are desired. Attempts have been made previously to try and have a "competition" of models with limitied results. It will be interesting to see if people woulc be truly willing to have their oodes participate in such a cometition. That said, such a competition would have significant value and would likely encourage substantial improvements in participating codes.
8	1825059		My benchmarking would be for comparison of optimization methods for calibration. I'm not sure this is of interest.
9	1828422		Good benchmark problems that are realistic but also challenge codes are difficult and time consuming to develop!!
10	1828704		Some form of benchmarking is critical to getting better confidence in models.
11	1829150		I'm not quite sure how is this different from what you asked about on the previous page.
12	1839882		This sounds interesting, and I would likely have more to contribute in the future.
13	1842738		This would be extremely useful for testing and verifying new codes
14	1843089		Always interested in the battle between finite difference and finite element....which works best!?!?! Would love to have access to calibrated MODFLOW examples - - -
15	1843735		Benchmarking is ESSENTIAL. This is the most valuable suggestion I've seen so far in this survey.
16	1854187		How are you handling model abstraction, calibration, etc. How do you handle confederations of models versus single models? What about CSM uncertainty? To support such an endeavor the system needs to state what responsibility it shoulders, more than sending a journal article, the model, and input files. The methodology should be universal, such that essentially any model or sets of models could be chosen to solve the problem, as the system would allow the analyst to plug-and-play models.
17	1878885		I think development of benchmarking problems and very careful analysis and presentation of results would be a great service. It is needed. It is presently missing. I have participated in benchmark exercises and published benchmark papers in mantle convection and crustal deformation modeling and I believe they are a great service to the community.

Would you be interested in contributing your course material, or other types of educational material, to the site?



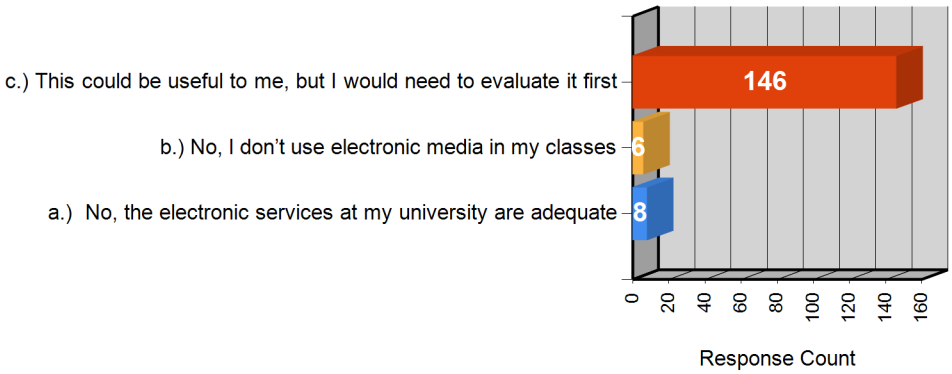
Total Respondents: 159

Total Skipped: 8

	Choice	Response Percent	Response Total
1	a.) No, I don't want anyone except my students to see my material	4.40 %	7
2	b.) No, I don't have electronic content in my courses	6.92 %	11
3	c.) Maybe	62.89 %	100
4	d.) Yes	25.79 %	41

Analytics	
Mean	3.101
Standard Deviation	0.702
Standard Error	0.056
Variance	0.493

Could you be interested in using course material posted on the site in classes, training, or other educational activities you are responsible for?



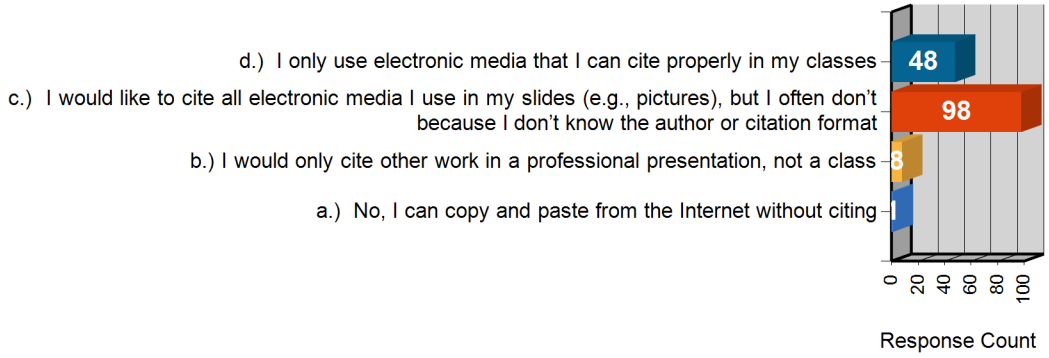
Total Respondents: 160

Total Skipped: 7

	Choice	Response Percent	Response Total
1	a.) No, the electronic services at my university are adequate	5.00 %	8
2	b.) No, I don't use electronic media in my classes	3.75 %	6
3	c.) This could be useful to me, but I would need to evaluate it first	91.25 %	146

Analytics	
Mean	2.863
Standard Deviation	0.468
Standard Error	0.037
Variance	0.219

Would you be willing to cite the original source of course information (a powerpoint slide, for example) that you obtained from the site?



Total Respondents: 155
Total Skipped: 12

	Choice	Response Percent	Response Total
1	a.) No, I can copy and paste from the Internet without citing	0.65 %	1
2	b.) I would only cite other work in a professional presentation, not a class	5.16 %	8
3	c.) I would like to cite all electronic media I use in my slides (e.g., pictures), but I often don't because I don't know the author or citation format	63.23 %	98
4	d.) I only use electronic media that I can cite properly in my classes	30.97 %	48

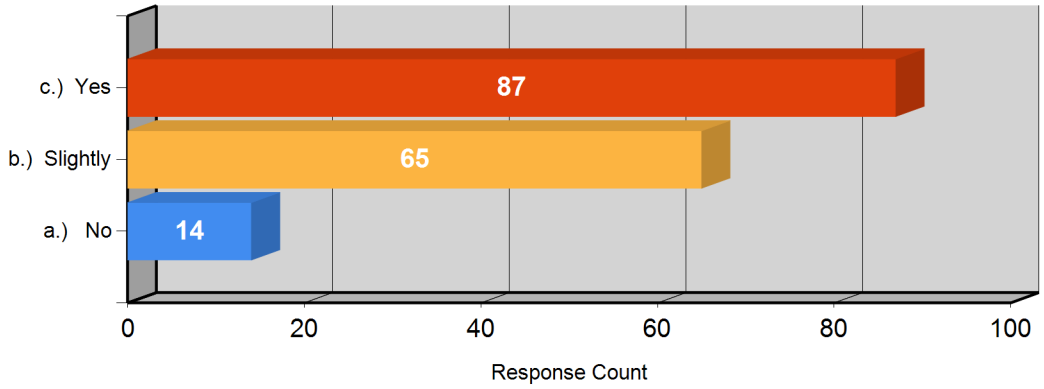
Analytics	
Mean	3.245
Standard Deviation	0.572
Standard Error	0.046
Variance	0.327

Comments about Teaching and Learning:

Total Respondents	11
Total Skipped	156

#	Response Number	Respondent Name	Response
1	1819542		There could be some real garbage contributed that the user would have to wade through. Contributing would mean answering questions from everyone. There are university copyright/ownership issues.
2	1819749		I don't teach at a govt lab, so not really applicable.
3	1820063		This is important
4	1822172		I don't teach.
5	1828422		Some material I use in class is also offered on-line and may be copyright protected. Some of my class material includes figures from the web, material from journal articles, etc. I do not worry too much about this when I am lecturing to on-campus students, but there could be some copyright issues if this material is put on line.
6	1829150		Again, IEMSS already has a repository for educational resources on its web site. Why do we want another one?
7	1830564		I do not teach classes.
8	1846267		good idea
9	1854187		I always try to cite the author and give credit where credit is due.
10	1862009		Again, poorly constructed response choices. If someone is actually going to analyze this data, any interpretation could be seriously flawed. This survey seems designed to validate someone's preconceived notions.
11	1878885		RE: these questions. I do not teach. I am at a national lab.

Would professional networking opportunities focused on the hydrology community be of interest to you?



Total Respondents: 166

Total Skipped: 1

	Choice	Response Percent	Response Total
1	a.) No	8.43 %	14
2	b.) Slightly	39.16 %	65
3	c.) Yes	52.41 %	87

Analytics	
Mean	2.440
Standard Deviation	0.644
Standard Error	0.050
Variance	0.415

Please describe other capabilities that would make HydroHUB useful to you or others in the general hydrology community.

Total Respondents	17
Total Skipped	150

#	Response Number	Respondent Name	Response
1	1819276		most important -- integrated access to data at multiple scales -- hydrology, climate, socio-economic parameters
2	1819290		I teach a course in biogeochemistry and hydrology examples could be helpful. My research focus on the biogeochemistry and hydrology of forested watersheds.
3	1819749		Publications database. Code repository and/or mirrors for other repositories (e.g., sourceforge) Clarity on licensing/approval processes...
4	1820063		The survey questions have suggested that models are the focus of HydroHUB. It will be just as important to get data in standard formats and converge on data formats that models can all use. So connections with CUAHSI HIS are important.
5	1820757		Weather and climate models have advanced because many people work on the same domain, on similar problems. Hydrologists work on many different watersheds and aquifers, that is many different domains. This makes it more difficult to advance the (modeling) science. If we had a number of standard domains that all could test/run codes on, with controled (and evolving) datasets, then we might be able to advance science at a faster clip. This concept is closely related to benchmark problems, but is fundamentally different. To some extent, benchmark problems are static. This would be dynamic.
6	1830565		* uncertainty analysis * modelling guidelines * inverse modelling
7	1830720		It should also cover open problems and provide open source development platform.
8	1833153		Web forums and polls for each model. A content management system for contributing authors to edit their own model pages (not a Wiki). Integration with other CUAHSI repositories for hydrologic and climatological data, but integration with OpenTopo.org for topographic boundary conditions.
9	1835816		I assume this would provide the ability to link to a person's web pages sponsored by one's employer
10	1842336		It would be useful to have reviews of the models like Amazon has reviews of media, complete with ratings.
11	1843089		If we could have access to our files (and my example would be MODFLOW) and then be able to run models from remote locations - - how would you handle the licensing? That has been my biggest issue - - students want to take the model home and work on calibration but our licensing prohibits installing the software on another computer.
12	1844576		I think links to publicly available hydrologic data by category could also be useful on this site, so people could come here first rather than searching the net for what kind of data is available and where.
13	1854187		See my original comments for more questions than answers, but the questions should shed light on the capabilities that I am looking for.
14	1855852		Providing a repository for models and related input files that have been run in support of published paper so that others could more easily extend previous work.
15	1862009		Statistics describing the application of particular types of hydrologic code in integrated studies where the validity of representations in the hydrologic model is assumed beyond the original intent (e.g., SWAT).
16	1879758		data storage models of various groundwater aquifers
17	1897187		Material that addresses the social interface. How-to-handle-it, especially if one does not already have advanced training in dealing with political issues, value judgements, etc.

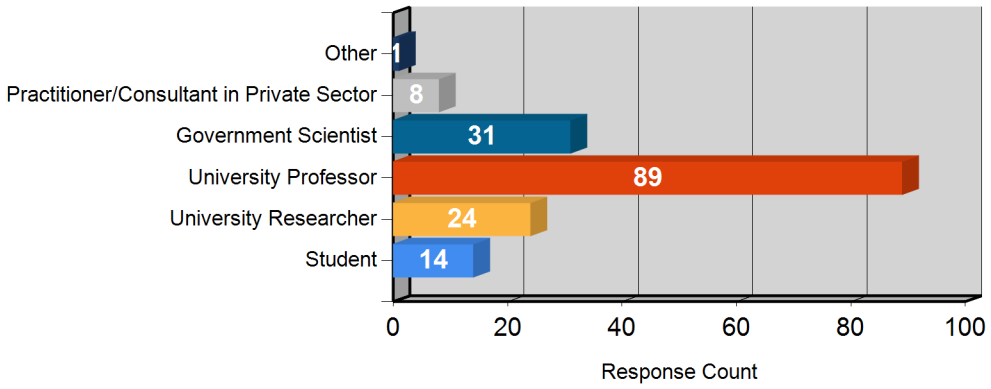
Please list names of codes that you would like to have available on the site along with their developers.

Total Respondents	24
Total Skipped	143

#	Response Number	Respondent Name	Response
1	1819247		MIKE SHE - DHI
2	1819331		Common Land Model (and CLM-PARFLOW)
3	1819381		TOUGH2 family of codes, especially TOUGHREACT and T2VOC Hydrus MODFLOW (likely Visual MODFLOW if possible - for teaching purposes)
4	1819742		Penn State Integrated Hydrologic Model (PIHM) -- Qu and Duffy, WRR, 2007
5	1819749		All LSMs: Noah (ncar/ncep/others); CLM (NCAR/others); VIC (UW/Princeton); Catchment (NASA/GSFC); SAC/Snow17 (NOAA/OHD); FASST (USACE/CRREL); Noah-distributed (NCAR) Plus standard Agency hydrology models: SWAT, MODFLOW, PRMS, HSPF, etc.
6	1820063		TauDEM: http://hydrology.neng.usu.edu/taudem/. David Tarboton UEB Snow Model: http://www.neng.usu.edu/cee/faculty/dtarb/snow/snow.html. David Tarboton SINMAP terrain stability mapping. http://hydrology.neng.usu.edu/sinmap2/. David Tarboton DHSVM. Distributed Hydrology Soil Vegetation Model. http://www.hydro.washington.edu/Lettenmaier/Models/DHSVM/index.shtml. Lettenmaier Group. VIC. Variable Infiltration Capacity Model. http://www.hydro.washington.edu/Lettenmaier/Models/VIC/VIChome.html. Lettenmaier Group RHESSYS, Regional Hydro-Ecologic Simulation System http://fiesta.bren.ucsb.edu/~rhessys/. Larry Band, Christina Tague TOPMODEL. http://www.es.lancs.ac.uk/hfdg/freeware/hfdg_freeware_top.htm. Keith Beven HEC HMS. http://www.hec.usace.army.mil/software/hec-hms/. US Army Corps of Engineers SNTHRM Snow Model. http://snow.usace.army.mil/model_info/sntherm.html. US Army Corps of Engineers SAC-SMA. Sacramento Soil Moisture Accounting Model. http://www.nws.noaa.gov/iao/iao_SAC_SMA.php. National Weather Service.
7	1820136		I typically look for USGS codes which are already documented and available for free.
8	1820333		MODFLOW, USGS SEAWAT, USGS FTLOADDS, USGS
9	1820548		WETSAND, Kazezyilmaz-Alhan, Medina, Richardson
10	1820757		tRIBS (MIT and others) MMS (USGS) WRF (NCAR) MODFLOW (USGS and third party vendors) MT3D-MS (Chmiao Zheng - U of Ala.- and third party vendors) MODFLOW-SURFAC (HydroGeoLogic) GSLIB (Stanford U) HYDRUS 1D and 2D (ARS and UC Riverside) FLUENT (Fluent?)
11	1820759		SWMM HSPF DRAINMOD HEC-RMS HEC_HMS

12	1826017		PHREEQC - USGS SUTRA - USGS Can't think of any others right now but there would certainly be more.
13	1827070		HYDRUS SWAT
14	1828422		Modflow family of codes, including MT3D etc Geostatistical codes and data analysis codes Educational codes
15	1830564		HydroGeoSphere (Rene Therrien) HYDRUS (2D/3D) (Šimůnek)
16	1835816		MODFLOW, USGS (Harbaugh) MODFLOW-LGR, USGS (Mehl, Hill) SEAWAT, USGS (Langevin, Guo, Dausman) GSFLOW, USGS (Niswonger, Barlow) MT3DMS, Chunmiao Zheng (soon USGS) HYDRUS, USDA (Simunek, van Genuchten) HEC, US Corps of Engineers SWAT PRMS, USGS (Leavesley, Hay, Regan, Markstrom) PARFLOW, LLNL (Maxwell, Thompson, Ashley) TOUGH, LBNL (Finsterle) UCODE, USGS (Poeter, Hill) PEST, SSPA (Doherty)
17	1838826		PRO-GRADE by Lin et. al. http://www.isws.illinois.edu/gws/sware/prograde/
18	1842336		It would be good to have the entire family of MODFLOW codes as well as MT3D . It would also be good to have the entire family of HEC models. Of course, there are hundreds of models. We could have many. It would be good to have both source code and versions compiled for common platforms, such as WINDOWS and UNIX.
19	1843089		MODFLOW - - Visual MODFLOW is the best. AGWA would also be excellent - - developed by the ARS/EPA/and University of Arizona Dr. Phil Guertin
20	1844576		I could post Morton's WREVAP code (including code description) for evaporation (both lake and areal) calculations. It is a hard to get by code otherwise.
21	1852726		http://code.google.com/p/cuencas/
22	1854187		Many types of differing scale and resolution including but not limited to MEPAS codes, RESRAD codes, XOQDOQ, GASPAR, LADTAP-II, GALE (all four codes and any new ones), MODFLOW, GMS, SMS, WMS, SWAT, HSPF, WASP, DWOPER6, EXAMS, RT3D, MT3DMS, AERMOD, MRA-IT, WEPP, WASH123, PCB, PEST, UCODE, SuperMUSE, EFDC, RECOVERY, HELP, BASS, GENII-2, ...
23	1875754		OTIS - Robert L Runkel - USGS OTEQ - Robert L Runkel - USGS OTIS2 - Judson W Harvey - USGS
24	1878885		FEHM Tough2 Modflow LaGriT FEFLOW FLOTRAN PFLOTRAN

Please indicate your position (required):



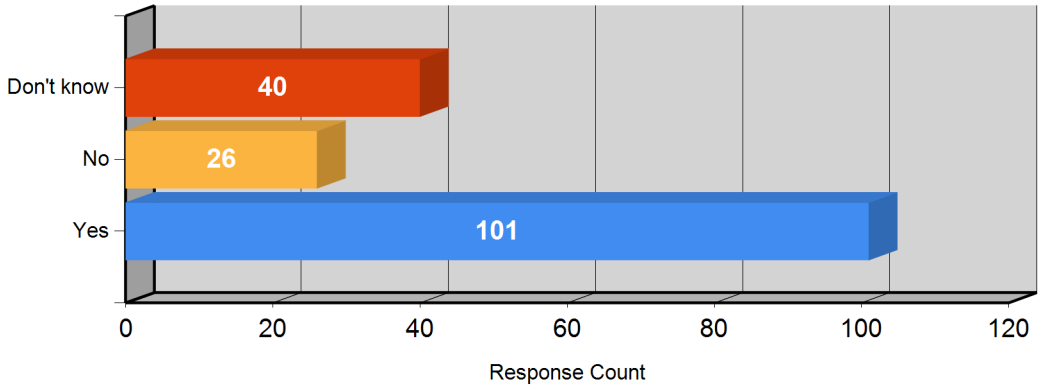
Total Respondents: 167

Total Skipped: 0

	Choice	Response Percent	Response Total
1	Student	8.38 %	14
2	University Researcher	14.37 %	24
3	University Professor	53.29 %	89
4	Government Scientist	18.56 %	31
5	Practitioner/Consultant in Private Sector	4.79 %	8
6	Other	0.60 %	1

Analytics	
Mean	2.988
Standard Deviation	0.954
Standard Error	0.074
Variance	0.910

Is your organization a CUAHSI member or affiliate member (required)?



Total Respondents: 167

Total Skipped: 0

	Choice	Response Percent	Response Total
1	Yes	60.48 %	101
2	No	15.57 %	26
3	Don't know	23.95 %	40

Analytics	
Mean	1.635
Standard Deviation	0.843
Standard Error	0.065
Variance	0.711

Please list your university or employer (optional).

Total Respondents	91
Total Skipped	76

#	Response Number	Respondent Name	Response
1	1819290		SUNY-ESF
2	1819304		Universidad Nacional de Colombia at Medellin
3	1819317		Drexel University
4	1819331		Michigan State University
5	1819381		University of Delaware
6	1819460		Univesrity of Delaware
7	1819507		University of Missouri, Columbia
8	1819539		University of Florida
9	1819610		University of Iowa
10	1819724		Kansas State University
11	1819742		University of New Hampshire
12	1819749		NASA Goddard Space Flight Center
13	1819976		Montana State University
14	1820063		Utah State University
15	1820333		UNIVERISTY OF MIAMI
16	1820466		UNC
17	1820580		Utah state university
18	1820757		New Mexico Tech
19	1820759		University of Delaware
20	1821239		penn state
21	1821410		University of Arizona
22	1821456		City University of New York
23	1821651		University of Illinois Urbana-Champaign
24	1821721		INRS-ETE
25	1821758		INRS-ETE
26	1822042		Utah State University
27	1822172		PNNL
28	1822397		University of Arizona
29	1822422		university of arizona
30	1822600		South Dakota State University
31	1823779		Virgina Tech

32	1824022		NMT
33	1825059		Cornell University
34	1825943		University of Pittsburgh
35	1825971		Loughborough University
36	1826017		Queensland University of Technology
37	1826226		QUT
38	1826492		EPFL
39	1827070		University of Georgai
40	1827183		University of Delaware
41	1828039		Mountain-eering srl
42	1828180		The University of Arizona
43	1828334		Clemson University
44	1828422		Univ of Illinois
45	1828704		University of Texas at Austin
46	1828939		Geological Survey of Denmark and Greenland (GEUS)
47	1829244		US EPA
48	1830564		Geological Survey of Denmark and Greenland
49	1830720		University of Sheffield
50	1830769		Centre for Ecology and Hydrology
51	1830894		http://www.lictek.com/
52	1832287		USGS
53	1833118		University of Kentucky
54	1833153		Utah State University
55	1833313		RTI International
56	1835816		USGS
57	1836781		USGs
58	1837079		USGS
59	1839882		University of British Columbia
60	1842143		Colorado School of Mines
61	1842166		Carnegie Mellon University
62	1842291		Texas Tech University
63	1842336		Western Michigan University
64	1842738		CU Boulder
65	1842867		Colorado State University
66	1843055		Mesa State College (Grand Junction, Colorado)
67	1843089		University of Arizona, Water Resources Research Ce

68	1843147		Carnegie Mellon University
69	1844450		University of Tennessee
70	1844576		Univerity of Nebraska
71	1845700		NMSU
72	1845818		University of Delaware
73	1846267		University of Copenhagen
74	1846316		Louisiana State University
75	1846444		Louisiana State University
76	1847317		MIT
77	1848285		Arkansas State University
78	1852726		University of Iowa
79	1854115		University of Arizona
80	1854187		U.S. Environmental Protection Agency
81	1855852		University of Arizona
82	1863545		Univ of Massachusetts
83	1865413		Geological Survey of Denmark and Greenland - GEUS
84	1875754		US Geological Survey
85	1876054		Carnegie Mellon University
86	1876539		U.S. Geological Survey
87	1877357		LANL
88	1878885		Los Alamos Natl. Lab.
89	1879758		Los Alamos National Laboratory
90	1879960		USGS
91	1903997		US Geological Survey

Any final thoughts before finishing this survey?

Total Respondents	22
Total Skipped	145

#	Response Number	Respondent Name	Response
1	1819507		Thanks for the opportunity to do the survey. This seems like a good idea.
2	1819749		This should incorporate similar interagency model support infrastructure (i.e. it should be a superset of NASA, EPA, USGS, USDA, NOAA capabilities)
3	1820063		Just do it! (Apologies Nike) le mieux est l'ennemi du bien." "the better is the enemy of the good enough" (Voltaire, 1764)
4	1820454		This would be a useful addition to the CUAHSI system.
5	1821239		thanks, HydroHub would be great
6	1825059		Good luck!
7	1827183		This is a great idea - it would be an excellent resource for both research and teaching.
8	1828039		We are a spin-off company of the university of Trento (Italy) and very interested in the hydrological models
9	1829150		In open source this is called 'branching'. Duplication of efforts in the open source approach is not appreciated. It seems to be a waste of resources.
10	1830720		Best of luck.
11	1833153		Nice work. I'm glad to see all the effort going into this. Very worthwhile.
12	1835816		I would rather answer the first question after the others because the later questions helped me understand the vision involved in HydrHUB
13	1839882		Sounds like a useful undertaking.
14	1842336		I hope you reach out and let survey participants know the results of the survey, and what CUAHSI's plans are relative to this issue. duane.hampton@wmich.edu
15	1842738		I'm not terribly interested in running models on your server (other than maybe evaluating an existing code), but would be very interested in better collaboration between researchers. We spend too much time reinventing the wheel, rewriting codes and solvers that have already been written before. Sharing of codes and site data would be a huge benefit to the community. For this to be useful though, the data, codes, etc on this site would need to be open source and freely modifiable. A revision control system so people can track changes between different versions of the code would also be essential. Having a part time software person who can help clean up the research codes and help making them more usable and easier to build on would also be great.
16	1843055		1 - I'm not a hydrologist per se, but I use a lot of hydrology in my courses on contaminant fate and transport, health risk assessment, and protection and restoration of aquatic systems. A site like the one you're contemplating could have a major positive impact on my courses. 2 - This was one of the most well-designed surveys I've ever taken. The way you worded the possible responses to each question were a great match for "reality".
17	1843089		How do I get on your list serve?
18	1844576		I think this is a great and timely idea, and many people including students will use it.
19	1846316		Great idea!

20	1852101		Descriptions and questions give no insight regarding QA/QC stipulations required of code posted to the proposed website, nor do they offer any information regarding archiving of codes as revisions or updates are added. Therefore, it is likely that codes accessed via the website would not be usable for regulatory analysis or decision making.
21	1854187		AGain, I like the concept but the devil is in the details
22	1863545		The Gallery concept is very good, if it is well organized and cross referenced for easy access by the user.