

Focusing on the Individual: Changing everyday practices in response to large-scale cyberinfrastructure

Paper No. 324-1

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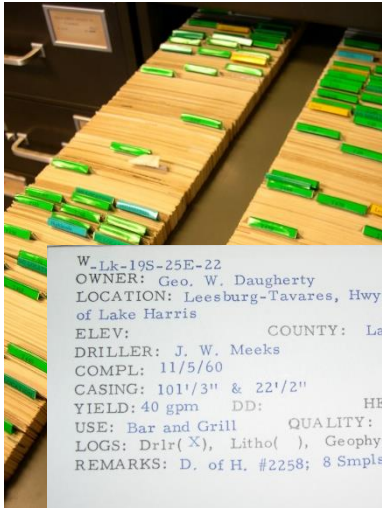
University of North Carolina at Chapel Hill

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My background



W-Lk-19S-25E-22 W- 5506
 OWNER: Geo. W. Daugherty
 LOCATION: Leesburg-Tavares, Hwy. 441, $\frac{1}{4}$ Mi. N.
 of Lake Harris
 ELEV: COUNTY: Lake
 DRILLER: J. W. Meeks
 COMPL: 11/5/60
 CASING: 101' $\frac{1}{3}$ " & 22' $\frac{1}{2}$ " TD: 179'
 YIELD: 40 gpm DD: HEAD: 5'
 USE: Bar and Grill QUALITY: Fresh
 LOGS: Drlr(X), Litho(), Geophy()
 REMARKS: D. of H. #2258; 8 Smpls. 80' - 179'
 (over)



WellDetail - Form

Well Detail Edit Record Well Summary Main Menu

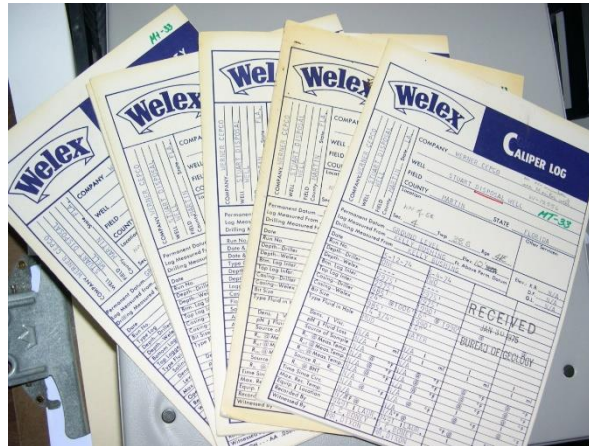
W Number: Well Name: CITY OF QUINCY
 GP Log File: Dunes/Operator:
 OG Permit Number: Well Notes:

County: GADSDEN Total Depth: 1395 Arc View Verified: Arc Staff:
 Water District: Elevation: 150 Card Verified: Card Staff:
 Well Use: Unknown Denick Floor: 0 Final Verified: Final Staff:

Coordinate Samples Casing Geophysical Logs Dat File Comments Aquifer Systems Formation Pics

Latitude (dms) Longitude (dms) Township N/S Range W/E Section Qtr of Qtr of Qtr of Qtr
 Deg 30 W Deg 84 W 2 N 3 W 6
 Min 35 W Min 34 W
 Sec 49 Sec 31
 LatDecimal 30.53694 Location Method 4 Mapped
 LonDecimal 84.57638 Datum Type Unknown
 Northing
 Easting Location text

Record: 14 of 1



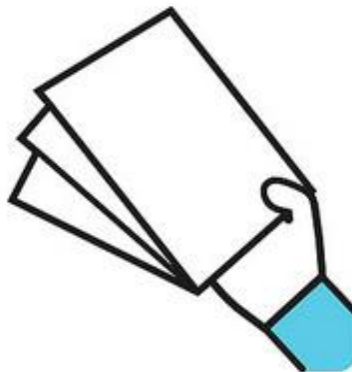
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There is a need for systems that enable scientists to focus their energies on answering 'grand' science questions instead of expending valuable time processing and translating data.



Push Button.



Get Research.

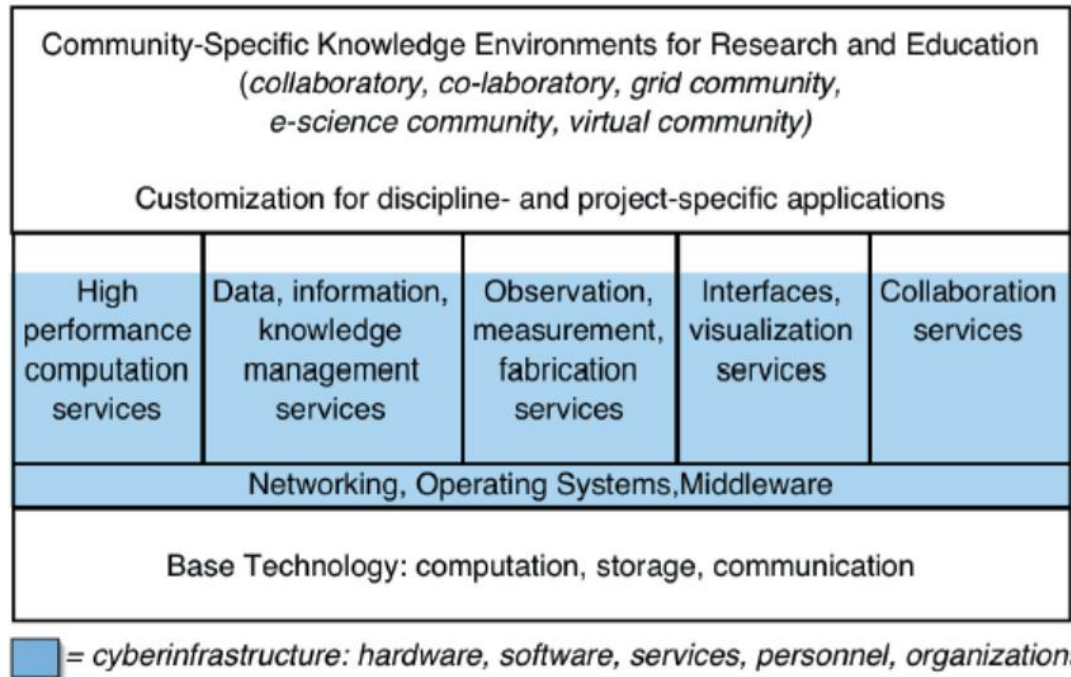


Make Progress.

<http://creativecommons.org/wp-content/uploads/2014/10/oabutton1.png>



What is Cyberinfrastructure?

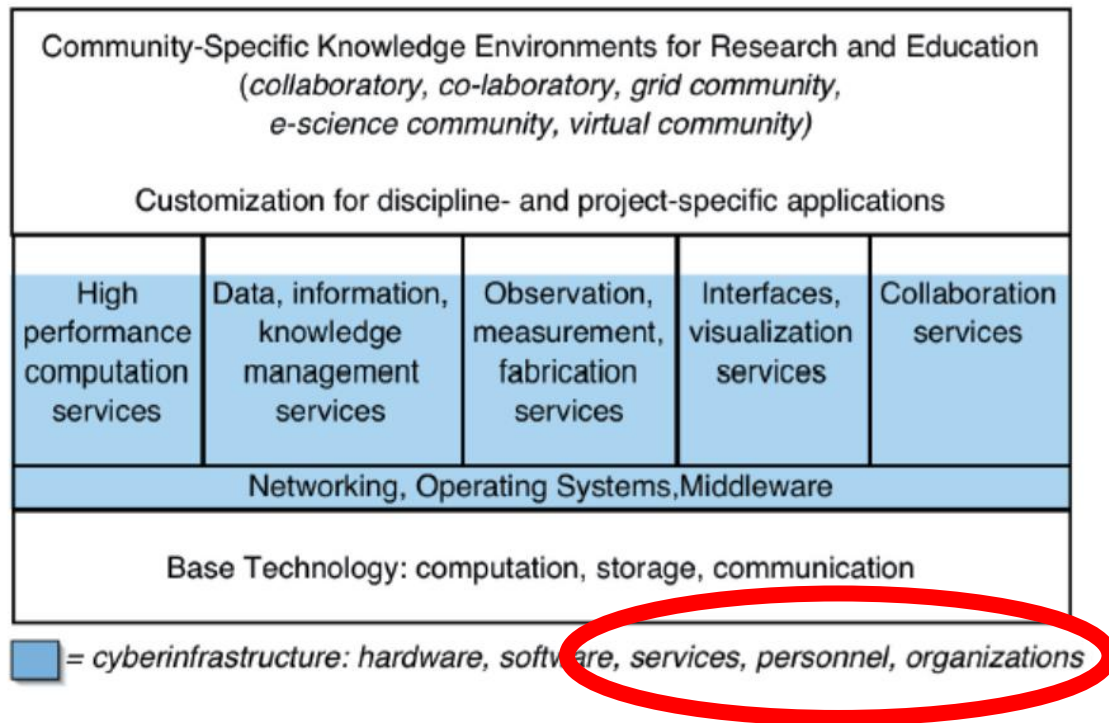


Atkins, D. (2003). Revolutionizing science and engineering through cyberinfrastructure: Report of the National Science Foundation blue-ribbon advisory panel on cyberinfrastructure.

Figure 2.1 Integrated cyberinfrastructure services to enable new knowledge environments for research and education.



What is Cyberinfrastructure?



Cyberinfrastructure definition – includes people!

Stewart, C. A., Simms, S., Plale, B., Link, M., Hancock, D. Y., & Fox, G. C. (2010, October). What is cyberinfrastructure. In *Proceedings of the 38th annual fall conference on SIGUCCS* pp. 37-44). ACM.

Figure 2.1 Integrated cyberinfrastructure services to enable new knowledge environments for research and education.



Cyberinfrastructure as standardization

How will these tools become part of
the every day practices of the
domain user community?



Steps towards standardization

1. Pre-conceptualization
2. Conceptualization
3. Discussion
4. Writing
5. Implementation

Cargill, C. F. (2011). Why standardization efforts fail. *Journal of Electronic Publishing*, 14(1).



Standards as agents of change



“immovable standards fail to adapt to the friction feedback loop and therefore die and get replaced. In order for a standard to survive in a stable the system, it needs to continue to change.”

Cargill, C. F. (2011). Why standardization efforts fail. *Journal of Electronic Publishing*, 14(1).



Standard failure modes

1. Failure to get started
2. Failure to achieve consensus
3. Failure to finish / focus
4. Failure in the marketplace
5. Failure to ensure compatibility
6. Failure to serve the public good

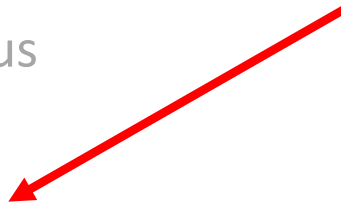
Cargill, C. F. (2011). Why standardization efforts fail. *Journal of Electronic Publishing*, 14(1).



Cyberinfrastructure failure modes?

1. Failure to get started
2. Failure to achieve consensus
3. Failure to finish / focus
4. Failure in the marketplace
5. Failure to ensure compatibility
6. Failure to serve the public good

The individuals, the domain scientists, the researcher in a lab or the field – they are the market place.



Cargill, C. F. (2011). Why standardization efforts fail. *Journal of Electronic Publishing*, 14(1).



Cyberinfrastructure failure modes?

Training and Development



Image courtesy of Jon Stelling



How can we make changes?

- **Membership Communities**

- GSA, EarthCube, ESIP, AGU-ESSI, Geo informatics communities...

- **As Peer Reviewers**

- Journals
 - Conferences
 - Proposals

- **Teachers/Mentors**

- Learning from students as well as allowing them the freedom to try new methods



My questions to you....

How do you manage (*potential*) failure in
your cyberinfrastructure initiatives?



Thank you!

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*For more information on
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<https://ramdeen.web.unc.edu/dissertation>
Password: aasg*

