



The government seeks individual input; attendees/participants may provide individual advice only.

Middleware and Grid Interagency Coordination (MAGIC) Meeting Minutes¹
December 2, 2020, 12-2 pm ET

Virtual

Participants

Ann Ngo (USPTO)	Joyce Lee (NCO)
Bronagh Friel (Google)	Katherine Austin (Texas Tech University)
Charles Elliott (LeMoyne-Owen College)	Kaushik De (University of Texas Arlington)
Damian Rouson (Sourcery Institute)	Keith Beattie (LBL)
Dan Fay (Microsoft)	Kristen Davis (NTIA)
Dan Taylor (Internet2)	Lavanya Ramakrishnan (LBL)
David Donato (USGS)	Lisa Arafune (Coalition for Academic Scientific Computation)
Denise Ferebee (LeMoyne-Owen College)	Mallory Hinks (NCO)
Diane Theiss (NCO)	Michael Corn (UCSD)
Don Petravick (Illinois)	Miron Livny (University of Wisconsin, Madison)
Katherine Evans (ORNL)	Padma Krishnaswamy (FCC)
Francine Alkisswani (NTIA)	Paul Ransom (NTIA)
Glenn Ricart (US Ignite)	Raj Kettimuthu (ANL)
Hakizumwami Runesha (University of Chicago)	Richard Carlson (DOE/SC)
Harry A. McFadden (DenmarkTech)	Sandra Delauder (Delaware State University)
Irene Chapman-Hawkins (Delaware State)	Sean Wilkinson (ORNL)
Jason Chabot (DHS)	Sharon Broude Geva
Jason Lopez (XodiAx)	Stefan Robila (NSF/CISE/OAC)
Jason Schuette (DARPA)	Stephanie Henning
Jessica Li (Illinois)	Valerie E. Taylor (ANL)
John Galitos (Houston Community College)	Valerie Chu
Wendy Wigen (NCO)	

¹ Any opinions, findings, conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the Networking and Information Technology Research and Development Program.

Proceedings

This meeting was chaired by Richard Carlson (DOE/SC) and Stefan Robila (NSF).

Workforce Development Speaker Series: Industry Perspective

Guest Speakers:

- Valerie Taylor, Division Director of the Mathematics and Computer Science Division, Argonne National Laboratory
- Damian Rouson, Better Scientific Software Fellow, Sustainable Horizons Institute
- Bronaugh Friel, Program Lead, Grow with Google

Valerie Taylor, Argonne National Laboratory

Workforce Development

- K-12: For girls and minorities, the representation is disproportionately small by high school
 - Important to engage and excite students about computing early
 - Work being done to update Computer Science AP exams
 - CS4ALL
 - Big Data Camp – ANL
 - STEM Ambassadors – PNNL
 - LLNL is doing work with Girls who Code
- Two-year programs: often overlooked, lots of opportunities for outreach
- Undergraduate students
 - Much work to be done with diversity
 - Highest percentage of women earning bachelor's degrees in CS in the 1980s, decreased since then.
 - Percentage of Hispanic or Latino students has been increasing
 - Percentage of black students has dropped slightly
 - Great opportunity to bring the work done at the labs into the classroom
 - ANL has a program called 1st look, which gives student the opportunity to see the lab before applying for summer internships – Outreach to community colleges and undergraduate institutions
- Graduate students
 - GEM Consortium – focuses on fellowships for masters and Ph.D. students with a focus on underrepresented groups
 - CS GSF – Computational science graduate student fellowship – practicum at the national labs
 - ATPESC: Argonne Training Program on Extreme-Scale Computing
 - CRLC-SHI: Virtual Seminar Series
- Alternative Pathways
 - Coding bootcamps: opportunity to focus on HPC as well

Questions

- Can you expand on opportunities for certificates?
 - Some universities offer pathways to degree programs. Some will actually look at having certificates in that area. A student takes a smaller number of classes, but the certificate

identifies that a student has taken a specific cluster of classes, for example, in HPC, and has a skillset in that particular area.

- Are the curricula developed jointly between Argonne or Lawrence Livermore and the faculty and institutions? Or is the curriculum delivered solely by the laboratory?
 - Some of the staff at Argonne have joint appointments with universities. This provides an opportunity to bring the lab into classroom and interacting with the other faculty and influence curricula.
- Are students able to participate in data camps online?
 - Yes, this past summer was a week-long virtual data camp
- Discussion on coordination to make programs accessible to all students and integrating into the classroom.

Damian Rouson, Sustainable Horizons Institute

Sustainable Horizons Institute (SHI)

Mission to develop the scientific workforce with a special focus on diversity and inclusion

- Advising and Impacting the Community
 - Congressionally mandated study of NASA University Leadership Initiative
 - #ShutdownSTEM day community townhall
 - Collegeville 2020 – white paper on advancing the cause of diversity and inclusion
 - Better Scientific Software
 - Joint Genome Institute
 - Building the Sandia Computing Research Workforce and Preparing for the Future through the Normalization of Inclusion
- Sample Programs
 - Sustainable Research Pathways – Build relationships centered on research collaborations and support underrepresented faculty and students
 - Broader Engagement BE@CSE21 – Jump start careers
 - Computing Research Leadership Council (CRLC) Virtual Seminar Series hosted by academic institutions and provided by national labs

Questions

- What opportunities are there for visiting professorships?
 - Virtual seminars are the only current program.

Bronaugh Friel, Grow with Google

Google Career Certificates

Initiative to help people without college degrees find high-paying, high-growth jobs

- Google career certificates
 - Google IT support professional certificate hosted on Coursera
 - 100 employers have signed up to recognize these certificates
 - Need-based scholarships for career certificates

- Not specific to Google products – products and tools taught are representative of the whole industry
- DOL approved apprenticeships
- Certificates in CTE high schools, building on established partnerships with 100+ community colleges
- 58% of learners come from underrepresented groups in tech
- 80% of learners report a career impact within six months
- 3 new Google Career Certificates starting in March
 - UX Design
 - Data Analytics
 - Project Management

Discussion

- HPC or these new data fields that are advanced research computing seem to be doing worse in terms of diversity than even CS.
 - Valerie: Commenting from the academic side there was an increase in the number of CS programs in the 90s. Programs are more widespread. Students that are looking to study HPC is small. From a national lab perspective, very few students are familiar with national labs
 - Damien: It's important to look at HPC historically. Computer was originally a job title. Number of women in computing peaked in the 1980's and then has been declining since. How do we get back to where we were? What are some of the root causes?
 - Important to disaggregate data. What is actually meant by "underrepresented groups"?
- Why have we seen little on the contribution of HPC to the COVID-19 vaccine?
 - It may be an issue of terminology. AI vs HPC. Perhaps we are seeing the two fields as separate and maybe they need to come together.
 - Computer science world seems to be missing the boat on how engaged it's been in addressing the needs of the pandemic.
 - How can we, as a community, increase the awareness about the impact of computing?
 - NCSA produced a video, *Seeing the Beginning of Time* (2017), under an NSF grant to show all of the science that happens in the "middle". Maybe it would be possible to do something similar to highlight computing.

Announcements

- Joyce Lee has accepted a position at NSF and this will be her last MAGIC meeting. Mallory Hinks will be filling her role in the future.

Next Meeting

February 3 (12 p.m. ET)