

Establishing paradigms for modifying and developing the Workforce Development section of the Science Gateways Community Institute Site

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Abstract

The Center of Excellence in Remote Sensing Education and Research (CERSER) program on the campus of Elizabeth City State University is currently partnering with the Science Gateways Community Institute (SGCI) which is led by the San Diego Supercomputing Center (SDSC). SGCI is divided into five sections to support members of the gateway community: Incubator, Extended Developer Support, Scientific Software Collaborative, Community Engagement & Exchange, and Workforce Development. Dr. Linda Hayden, the CERSER Principal Investigator, leads the Workforce Development Section. The Workforce Development goals are to increase the development pipeline of science gateway young professionals and educators with an emphasis on increasing involvement of students from underrepresented groups.

Abstract

As science today grows increasingly computer based, it poses challenges and opportunities for researchers. Scientists and engineers are turning to gateways to allow them to analyze, share, and understand large volumes of data more effectively. The existence of science and engineering gateways and the sophisticated cyberinfrastructure tools together can significantly improve the productivity of researchers. Most importantly, science gateways can give uniform access to the cyberinfrastructure that enables cutting-edge science.

Abstract

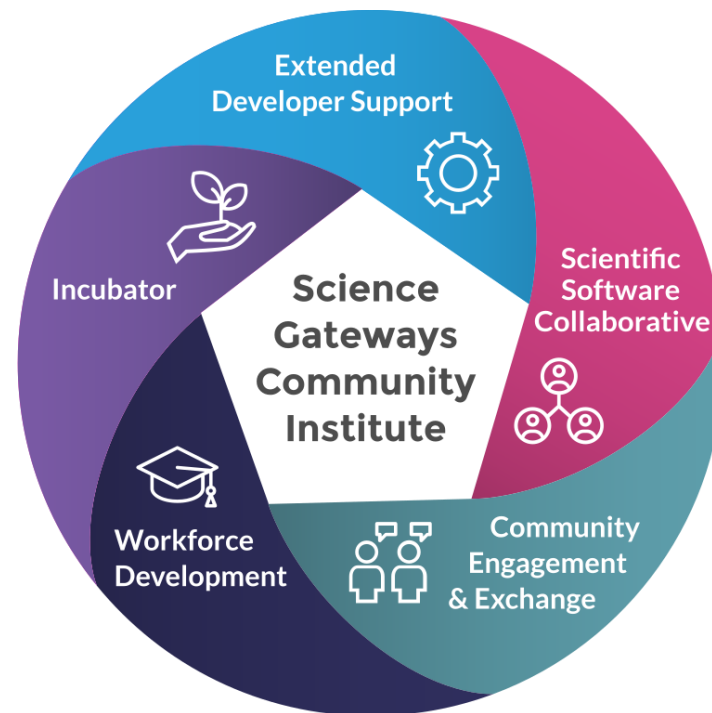
The goal of the science gateways team was to increase the interactivity of the SGCI Workforce Development section of the SGCI web site to attract potential members and publicize needed information. SGCI had recently converted to the web platform Liferay from WordPress which necessitated the need to learn a new platform and its capabilities. The pages on the SGCI server were not able to be accessed during this project due to design and team coordination efforts. The proposed modifications for this project were completed utilizing HTML, CSS, and graphical modeling.

SGCI Workforce Development Site Enhancements

- Purpose of Project
- Primary Goal
- Secondary Goal

Science Gateways Community Institute

- SGCI Purpose
- Consists of five core groups
 - Incubator
 - Extended Developer Support
 - Scientific Software Collaborative
 - Community Engagement and Exchange
 - Workforce Development
- SGCI Partners



Science Gateways
Community Institute

SGCI Partner Institutions



SGCI Partner Organizations



SGCI Participants



SGCI Workforce Development

- Internships
- Workshops
- Webinars
- Young Professionals Network



Science Gateways
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SGCI Young Professional Network

- Support for Young Professionals
 - Advisors
 - Interns
 - Technical assistance
- Young Professional of the Year Awards



SGCI Internships

- 4 - week program
 - Gateways Workshop at ECSU
- 8 - week program
 - Hands-on Gateways development at partnered institutions
- Gateways Conference
 - Attendance required
 - Financial support offered



Content Management Systems

- Underlying Infrastructure
- Contributors



Liferay

- Open source platform
- Eases the creation of web content
- Content is created using units



Lexicon

- Web development language based on atomic design
- Uses a grid system to define webpages
- Utilizes a unified measurement system



HyperText Markup Language

- Creation of web pages
- Uncompiled
- Tags
- `<BOLD>Name</BOLD>` = Name



Cascading Style Sheet

- CSS is a style sheet language that is often used in tandem with HTML
- Allows for the separation of key presentation components from the content
- Improves flexibility of a web page for users

CSS



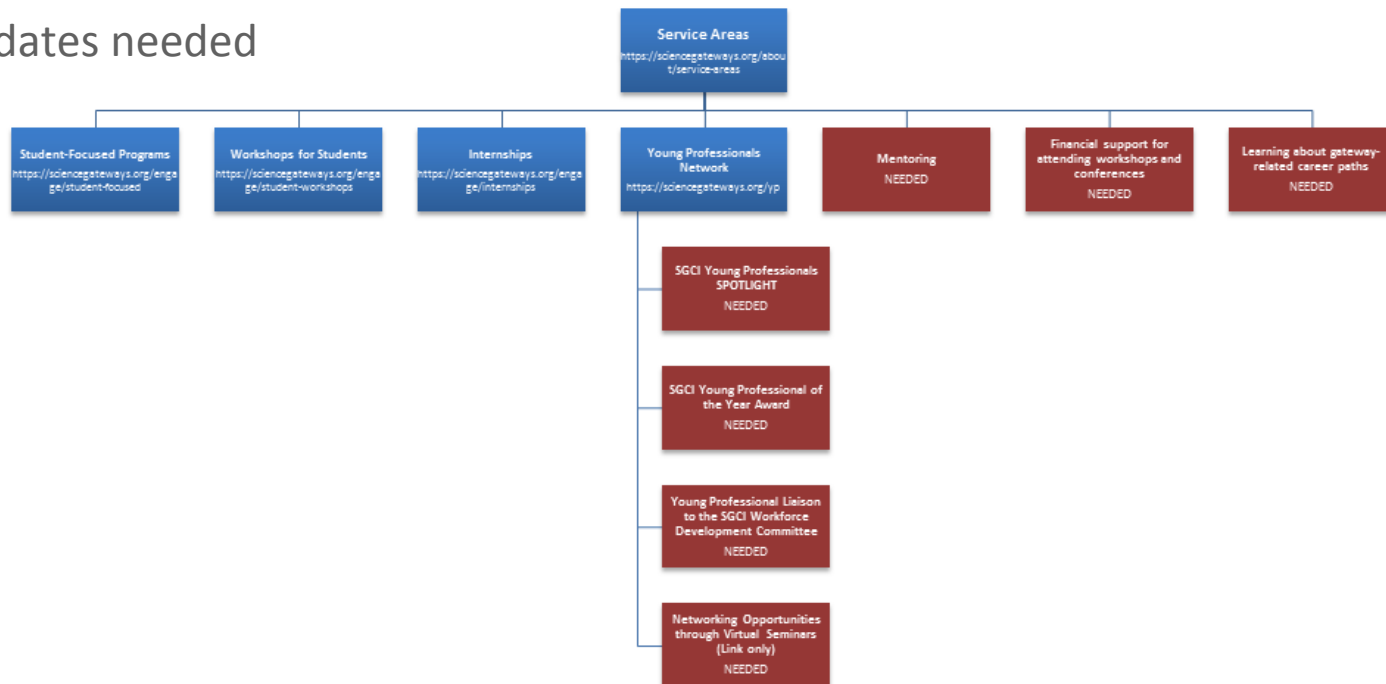
Methodology: Introduction

- Website Updates
- Current state of maintenance
- First Goal - Direct modification of site: No-go
- Second Goal - Creation and modification of pages

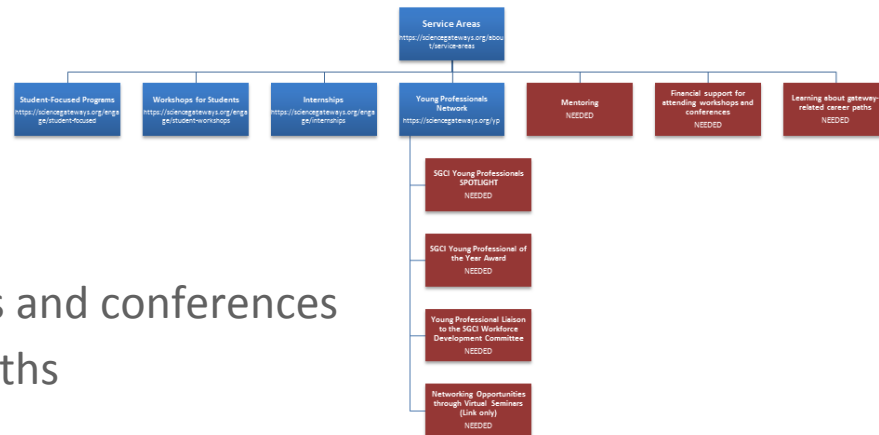


Methodology: Introduction

- Website Flowchart
- Missing or updates needed



Methodology: Introduction



- Mentoring
- Financial support for attending workshops and conferences
- Learning about gateway-related career paths
- SGCI Young Professionals SPOTLIGHT
- SGCI Young Professional of the Year Award
- Young Professional Liaison to the SGCI Workforce Development Committee
- Networking Opportunities through Virtual Seminars

Methodology: Mentoring

- Mentor/Intern Resources

```
<DIV>
  <H3>
    Intern - Tips to making your internship a success
  </H3>
  <DIV>
    <a href="https://www.huffingtonpost.com/aubrie-przybysz/top-10-tips-to-making-
    you_b_6606174.html">
      https://www.huffingtonpost.com/aubrie-przybysz/top-10-tips-to-making-
      you_b_6606174.html
    </a>
    <BR />
    What do I do with myself? This is a question most students ask themselves while
    interning. Through my experience I found ten easy tips to help guide your internship and
    make the most of it by creating a successful experience.
  </DIV>
</DIV>
<HR>
```

```
<DIV CLASS="ASSET-ABSTRACT">
  <H3 CLASS="ASSET-TITLE">
    Intern - Tips to making your internship a success
  </H3>
  <DIV CLASS="ASSET-CONTENT">
    <DIV CLASS="ASSET-SUMMARY">
      <A CLASS="TAG" HREF="https://www.huffingtonpost.com/aubrie-
      przybysz/top-10-tips-to-making-you_b_6606174.html">
        https://www.huffingtonpost.com/aubrie-przybysz/top-10-tips-to-making-
        you_b_6606174.html
      </A>
      <BR />
      What do I do with myself? This is a question most students ask themselves while
      interning. Through my experience I found ten easy tips to help guide your
      internship and make the most of it by creating a successful experience.
    </DIV>
  </DIV>
</D3>
<HR>
```

Methodology: Mentoring

- Mentor/Intern Resources

Engage / Student-Focused Programs / Mentor Links

QUANTIFYING KALOSIN BOUNDARIES ON EASTERN AND WESTERN WALLS OF THE GULF STREAM PROTRUDING NEAR CAPE HATTERAS INTO SARGASSO SEA

CReSIS

At the Gateways 2016 conference poster session, students were able to share their research and get feedback from gateway professionals.

Webinars

- Webinar Archive
- Annual Conference
- Gateways 2018
- Gateways 2017
- Gateways 2016
 - Program
 - Abstracts

Bootcamp

- Bootcamp Application and FAQs
- Bootcamp Instructors
- Mini Science Gateways Bootcamp
- Student-Focused Programs

Mentor Links

- Young Professionals Network
- Professional Editing Support
- Workshops for Students

Mentor Links

Intern - Top 8 Mistakes Interns Make

<https://www.thebalance.com/mistakes-while-interning-1986568>

An internship is a valuable college experience that teaches students how to act and perform professionally in the real world while affording them the opportunity to acquire knowledge and skills in a particular industry. No longer optional, an internship is one of the first things employers look on resumes.

Intern - Top 10 tips for Interns

<https://www.thebalance.com/top-tips-for-interns-1986781>

Organizations seek interns who are motivated and exhibit a "go-getter" attitude. Employers also want people doing internships in their company who have a strong work ethic and are dependable and work well independently and in a team environment. Following these tips will increase the likelihood that your internship will turn into a full-time job offer.

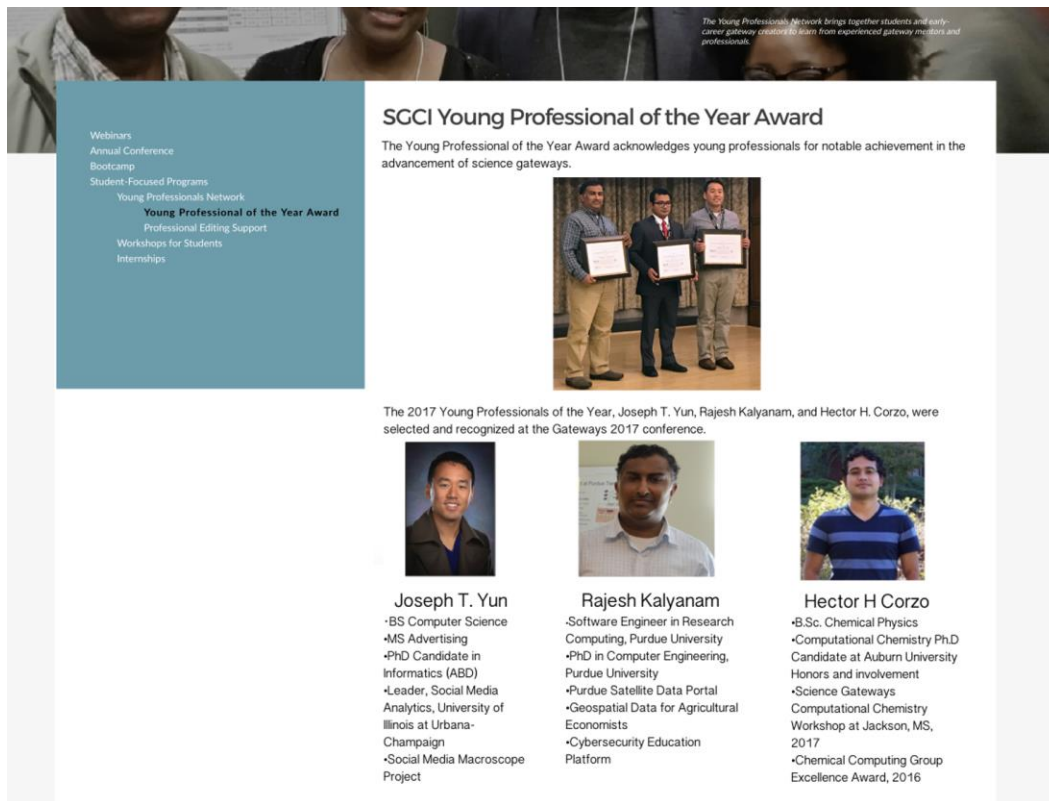
Intern - Tips to making your internship a success

https://www.huffingtonpost.com/auerie-przytycz/top-10-tips-to-making-you_b_6606174.html

What do I do with myself? This is a question most students ask themselves while interning. Through my experience I found ten easy tips to help guide your internship and make the most of it by creating a successful experience.

Methodology: Young Professional of the Year Award

- Award
- “... a website highlight.”
- Graphical Model



The Young Professionals Network brings together students and early-career gateway creators to learn from experienced gateway mentors and professionals.

SCCI Young Professional of the Year Award

The Young Professional of the Year Award acknowledges young professionals for notable achievement in the advancement of science gateways.

Webinars
Annual Conference
Bootcamp
Student-Focused Programs
Young Professionals Network
Young Professional of the Year Award
Professional Editing Support
Workshops for Students
Internships

The 2017 Young Professionals of the Year, Joseph T. Yun, Rajesh Kalyanam, and Hector H. Corzo, were selected and recognized at the Gateways 2017 conference.

Joseph T. Yun

- BS Computer Science
- MS Advertising
- PhD Candidate in Informatics (ABD)
- Leader, Social Media Analytics, University of Illinois at Urbana-Champaign
- Social Media Macroscopic Project

Rajesh Kalyanam

- Software Engineer in Research Computing, Purdue University
- PhD in Computer Engineering, Purdue University
- Purdue Satellite Data Portal
- Geospatial Data for Agricultural Economists
- Cybersecurity Education Platform

Hector H Corzo

- B.Sc. Chemical Physics
- Computational Chemistry Ph.D Candidate at Auburn University
- Honors and involvement
- Science Gateways Computational Chemistry Workshop at Jackson, MS, 2017
- Chemical Computing Group Excellence Award, 2016

Methodology: Gateway Career Path Survey

- Survey
- Sections
 - Introduction to Gateways
 - Gateway Survey for Career Path Description
 - Gateway Skills Development
 - Future of Gateways

← Professionals Working With Gateways Survey ☆ All changes saved in Drive

SEND

QUESTIONS RESPONSES

Section 1 of 4

Introduction to Gateways

Form description

What is your area of responsibility in gateway development?

Long answer text

How were you originally introduced to gateways as a tool for science?

Long answer text

What did you know about gateways prior to employing one for your project?

Long answer text

After section 1 Continue to next section

Methodology: Gateway Career Paths

The following is the list of questions submitted to SGCI personnel for review:

Introduction to Gateways

1. What is your area of responsibility in gateway development?
2. How were you originally introduced to gateways as a tool for science?
3. What did you know about gateways prior to employing one for your project?

Gateway Survey for Career Path Description

1. What did you learn from using and developing a gateway for your project?
2. How did the use of gateway change your project?
3. Would you use gateways in future projects?
4. Did the use or development of a gateway improve the project?
5. What do you think are the most important parts of a gateway?
6. Which gateway project(s) are you most proud of?

Gateway Skills Development

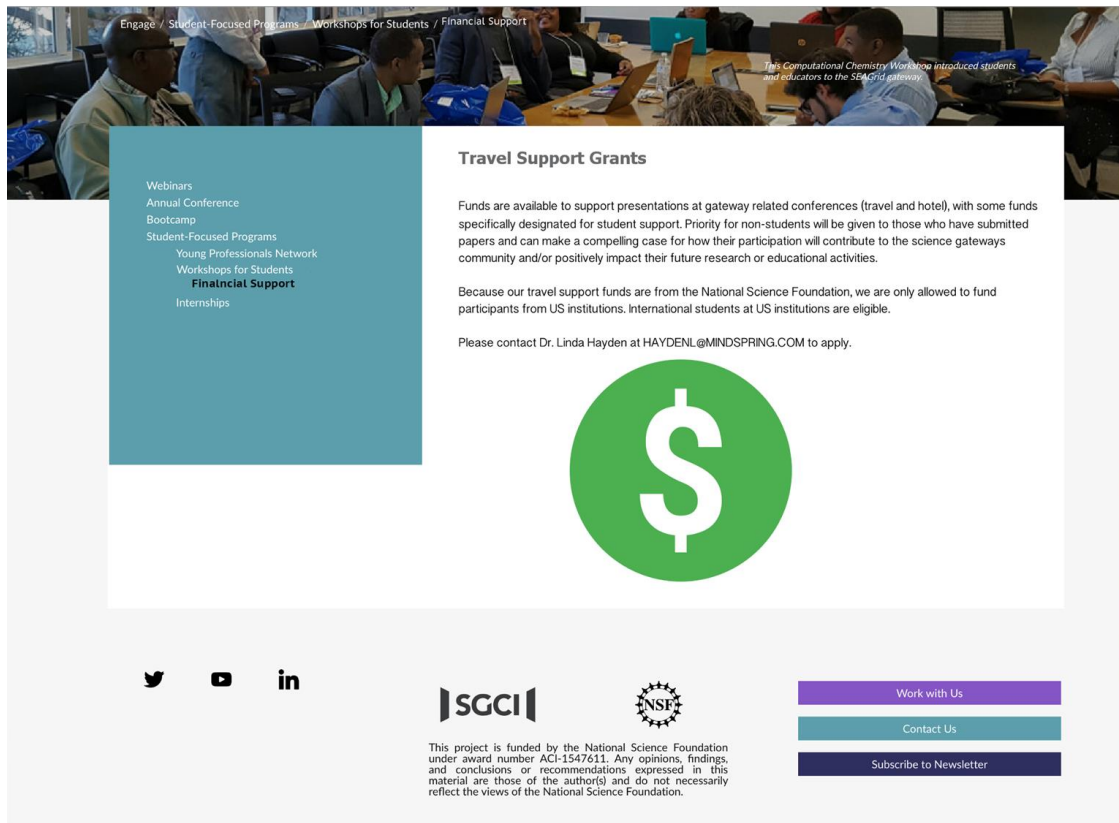
1. What path of study would you recommend to someone interested in gateway development?
2. How much education is needed to become a gateway developer?
3. What are your most valuable talents and skills in regards to gateways?



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Methodology: Financial Support

- Financial Support
- Graphical Model



The screenshot shows the 'Financial Support' page of the Science Gateways Community Institute. At the top, a navigation bar includes links for 'Engage', 'Student-Focused Programs', 'Workshops for Students', and 'Financial Support'. Below this is a header image of a workshop with the text: 'This Computational Chemistry Workshop introduced students and educators to the SEASGrid gateway.' The main content area is divided into two columns. The left column, on a teal background, lists various programs: Webinars, Annual Conference, Bootcamp, Student-Focused Programs, Young Professionals Network, Workshops for Students, **Financial Support**, and Internships. The right column, on a white background, is titled 'Travel Support Grants' and contains the following text: 'Funds are available to support presentations at gateway related conferences (travel and hotel), with some funds specifically designated for student support. Priority for non-students will be given to those who have submitted papers and can make a compelling case for how their participation will contribute to the science gateways community and/or positively impact their future research or educational activities.' It also states: 'Because our travel support funds are from the National Science Foundation, we are only allowed to fund participants from US institutions. International students at US institutions are eligible.' and provides contact information: 'Please contact Dr. Linda Hayden at HAYDENL@MINDSPRING.COM to apply.' Below the text is a large green circle with a white dollar sign. The footer includes social media icons for Twitter, YouTube, and LinkedIn, the SGCI logo, the NSF logo, and three buttons: 'Work with Us', 'Contact Us', and 'Subscribe to Newsletter'. A disclaimer at the bottom right states: 'This project is funded by the National Science Foundation under award number ACI-1547611. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.'

Engage / Student-Focused Programs / Workshops for Students / Financial Support

This Computational Chemistry Workshop introduced students and educators to the SEASGrid gateway.


Webinars
Annual Conference
Bootcamp
Student-Focused Programs
Young Professionals Network
Workshops for Students
Financial Support
Internships

Travel Support Grants

Funds are available to support presentations at gateway related conferences (travel and hotel), with some funds specifically designated for student support. Priority for non-students will be given to those who have submitted papers and can make a compelling case for how their participation will contribute to the science gateways community and/or positively impact their future research or educational activities.

Because our travel support funds are from the National Science Foundation, we are only allowed to fund participants from US institutions. International students at US institutions are eligible.

Please contact Dr. Linda Hayden at HAYDENL@MINDSPRING.COM to apply.



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Analysis

- Establish a method of updating the Workforce Development pages
- Identify pages that need revisions
- Identify new pages that are needed
 - Gateway Career Paths
 - Young Professionals of the Year
 - Mentoring
 - Financial Support
- Create or model new pages or edits of existing ones



Science Gateways
Community Institute

Conclusion

- Models and html content for future additions and changes were developed
- Mentoring/internship resources page created with HTML and CSS
- Young Professionals of the Year and Financial support pages modeled
- Gateways career paths survey created

Future Works

- Links to seminars on the Young Professionals page
- Develop Young Professional Spotlight page
- Implement the career path survey and gather data
- Identify and collect banner images for use in new and existing pages
- Continue work towards a paradigm for updating SGCI Workforce Development pages

Acknowledgements

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QUESTIONS?