

Visual Analytics of the NSW Crane Innovation Ecosystem

User Needs Analysis: Phase I

Subject # _____

Part I

The following questions will help us understand your background and experience with visualizations.

Please indicate your age:

- ☐ <20
- ☐ 21-30
- ☐ 31-40
- ☐ 41-50
- ☐ 51-60
- ☐ >60

Gender? _____

What is your native language?

- ☐ English
- ☐ Other, please specify _____

What is your department name, specialization, or area of focus? What words would you use to describe the focus of your work?

Which of these visualization types are you familiar with?

- ☐ Graphs
- ☐ Maps
- ☐ Tree diagrams
- ☐ Network visualizations

Have you ever taken a seminar, course, or training session on visualization?

- ☐ Yes
- ☐ No

If so, please specify the seminar, course, or training session:

Part II

What emerging areas in science and technology interest you professionally?

We are developing a visualization that will use large-scale publication and funding data to support the analysis and visualization of key experts, institutions, publications, and funding in strategic areas. Please help us identify which strategic areas interest you (by placing a checkmark next to each topic that is of interest):

- ☐ Advanced electronics
- ☐ Human systems integration
- ☐ Sensors and sensor fusion
- ☐ Robotics
- ☐ System of systems test and evaluation
- ☐ Power and energy management
- ☐ Artificial intelligence
- ☐ Internet of Things

What other strategic areas would you or your co-workers be interested in seeing visualized? Suggest as many as you can think of.

Please describe the processes you use when making strategic decisions, to the extent that you can. We are primarily interested in what kinds of information you use when you make decisions such as:

a) How do you allocate funding?

b) How do you decide when to hire outside expertise versus using inside expertise? How do you identify the need for expertise?

c) How do you select contractors? What factors beyond the specific qualifications of the contract are considered?

Which metrics influence and inform resource allocation decisions at CRANE?

- ☐ Citations in scientific literature
- ☐ Recent calls for funding
- ☐ How other federal agencies are focusing their funding
- ☐ Dollars committed to a topic
- ☐ Internal NAVY needs
- ☐ External research needs
- ☐ Other: _____

If you were to look at a visualization that shows you changes in research focus over time, over what time span would you like to view change?

- ☐ 2 years
- ☐ 5 years
- ☐ 10 years
- ☐ 20 years
- ☐ I would like the ability to change the number of years considered

Part III

In this part of the survey, you will see a series of visualizations that were compiled to capture the publications, expertise and funding in the “Hypersonic” research area. Please take a few moments to review each visualization, and then tell us how you might use it, or what insights you might gain from it.

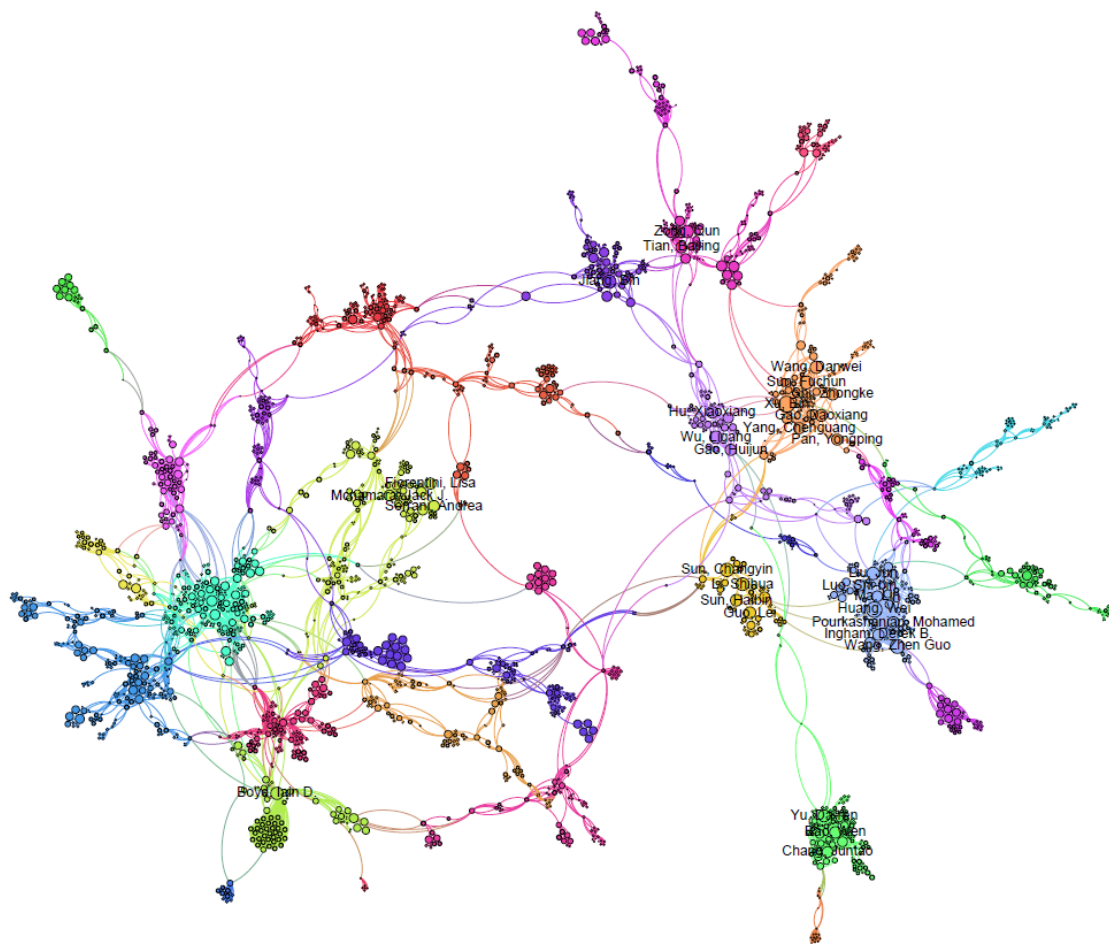
Figure 1. Number of “Hypersonic” publications and citations per year:



What insights might you gain from this visualization?

How might you use this visualization/these insights?

Figure 2. Co-author network of authors listed on “Hypersonic” papers. Highly cited authors are labelled:



What insights might you gain from this visualization?

How might you use this visualization/these insights?

Figure 3. Top-10 most frequently acknowledged organizations that fund “Hypersonic” research:



What insights might you gain from this visualization?

How might you use this visualization/these insights?

Which of these three visualizations would be most useful for you, assuming they were populated with data relevant to your work? Why?

Part IV

Next you will see three interactive visualizations. Please take a few moments to review each visualization, and then tell us how you might use it, or what insights you might gain from it.

1st visualization: [Co-authorship Geospatial Visualization](#)

How might you use this visualization? What insights might you gain from it?

2nd visualization: [Co-authorship Network Visualization](#)

How might you use this visualization? What insights might you gain from it?

3rd visualization: [Science Map Visualization](#)

How might you use this visualization? What insights might you gain from it?

Which of these three interactive visualizations would be most useful for you, assuming they were populated with data relevant to your work? Why?

Thank you!