**G&C 2020 Design Competition: Innovations in Autonomy and Automation**

**Goal**

The goal of this competition is for participants to exercise their knowledge, creativity and presentation skills to identify creative applications of Autonomy and Automation within the marine market that may ultimately lead to future business for the Company.

**Background**

Autonomy is a current company focus area. Gibbs & Cox is positioning itself to be a Lead Systems Integrator for US Naval Applications as well as commercial and recreational applications. Full vessel autonomy relies on a thorough understanding of vessel design, operations and maintenance. Automation of sub systems plays a critical role in developing a fully autonomous vessel. The operation of an autonomous vessel and the application of autonomy in the marine industry is immature and creative applications of technology will help advance the state of the art.

**Challenge**

This is an open competition seeking to find creative solutions and applications related to Autonomy and automation. As in past years, we do not want to limit ideas. \

Some ideas to consider:

* A new concept for an autonomous vessel - what might the autonomous vessel of the future look like? What innovative features could it include? What can change if no personnel are onboard?
* A different and innovative way to automate a ship system – Autonomy is all about reliability, are there simple solutions to consider in automating ship systems?
* Applications of Autonomy and Automaton to reduce the timeframe of maintenance and overhaul availabilities.
* Innovations in power generation to increase reliability and operational availability
* Ideas for applying autonomy in untapped markets - pleasure craft, environmental applications, etc.
* Artificial intelligence / machine learning – how can we leverage this technology for ship design or operation?
* Autonomy as safety enhancement – Can the marine industry follow the automotive industry implementing features that lead to driverless operation?

Don’t limit yourselves to these ideas, any topic related to Autonomy and Automation will be considered.

**Criteria**

Judging criterion will be based on the creativity of the idea, the practicality of its implementation, the potential for advancing G&Cs position in the autonomous market and the depth of the technical presentation.

**Ground Rules**

Eligibility: All Entrants must be regular full time employees of Gibbs & Cox and may not be directly involved in either the judging or administration of the competition. Entrants may be either individuals or teams. An entrant does not need to have a background in Autonomy or Automated systems.

All Entrants must notify the Panel Chairman of intent to submit an entry including a list of team members if applicable.

Registration Deadline: 10:00 A.M. Eastern Daylight Time on January 6, 2019

Submission Deadline: 10:00 A.M. Eastern Daylight Time on February 17, 2019

Submission Content:

* Descriptive information at Registration (provided in informal email):
	+ Title of entry
	+ Team members
	+ Introduction, description of entry and goals/feasibility for implementation (3 paragraphs included in email)
* Submission package (not to exceed 10 slides or pages):
	+ Background Information: Your opportunity to set the stage for your idea.
	+ Target market: Description of the client or application including who they are and why this innovation will advance the state of the art.
	+ Competition: Are there other technologies or concepts that currently meet these needs? What void does this idea fill in the marketplace?
	+ Innovations: Why is the concept important to the advancement of Autonomy and automation? What problem is this new concept solving? What innovative ideas and solutions does the design include that break new ground?
	+ Drawings, Diagrams or 3-D CAD Renderings as applicable
	+ Design Documentation and basis (calculated, parametric, comparative, etc.)
* Format for submission: Microsoft PowerPoint preferred, Adobe Acrobat or MS Office compatible products

Judging: Entries will be judged by a panel consisting of

 Ben Capuco, G&C Chief Naval Architect (Panel Chairman)

 Jeff Bowles, Director, DLBA

 Josh Wallick, Director, Unmanned & Autonomous Systems

Tom Schubert, G&C Chief Engineer

 Ray Sheldon, Chief Operating Officer

 Chris Deegan, Chief Executive and President

Judging will be conducted after presentation to the judging panel.

Key considerations are:

* Potential for advancing the state of the art in Autonomy and Automation
* Engineering and manufacturing feasibility
* Potential market place breakthroughs

**Awards:**

**Winner** $2,500 to be split between all team members

**Runners up** $1,000 to be split between all team members, number of runners up receiving awards at the discretion of G&C management

**Fine Print:**

Late registrations or submissions will not be considered.

The decisions of the judges are final.

All material submitted as part of the entries becomes the property of Gibbs & Cox upon submission and is subject to the provisions of the Gibbs & Cox Employee Patent and Copyright Agreement.