

Judging

The Nevada iGEM team has submitted four new parts to the registry and will have shown that three of the parts work as expected. We have also used two parts previously submitted by the Evry 2013 team and shown that they function in yeast as a part of our BAIT switch project.

New Parts Submitted to the Registry and shown to work as expected:

[Jaz1](#)

[Jaz6](#)

[COI1](#)

Existing BioBrick Part or Devices that have been further characterized

[TIR1](#)

[GFP-AID](#)

Attributes

- The BAIT Switch project was conceived and designed by the entire Nevada iGEM team with the help of our advisors, Ian Wallace and Veronica Zepeda. We all worked throughout the summer with both individual tasks and group projects. We attended weekly meetings on Mondays to inform everyone where we were individually and what the next steps would be as a team.
- Khurram Fahim and Janice Bautista focused on the TIR1 system. They modified and engineered new plasmids for integration into yeast. These included plasmids containing the IAA17 degenon and GFP reporter. Some methods they performed are tagging of TIR1 with a Myc tag; primer design to create the insert of pTEF-GFP-IAA17; and later, work with JAZ6 in the COI1 system.

- Matthew Hawn and Zoe Meraz focused on the COI1 system. This included modification and engineering of appropriate plasmids to be joined to those of Khurram and Janice for the goal of a bioorthogonal system using auxin and coronatine in yeast. Matt also created many of the infographics and web design, as well as performed yeast growth assays.
- Zoe focused on the synthesis of the construct of pTEF-GFP-JAZ1 and moving it from E coli into yeast. She also completed all safety form requirements.
- Tori Speicher was responsible for all things parts registry related! She also performed many lab procedures such as gel electrophoresis, PCR, miniprep, etc.
- Josh Beard also worked with the COI1 system. He helped in the tagging of COI1 with HA and worked with the JAZ degron for introduction into E. coli and movement into yeast cells.
- We received parts and plasmids from the [UCSF_UCB iGEM Team](#) and the Liebman lab - University of Nevada, Reno
- The cDNA used to clone COI1 and Jaz1 and Jaz6 were obtained from the [Arabidopsis Information Resource Center](#).

Judging Form

Team: Nevada

Track: Foundational Advance

Project Name: BAIT Switch: Bioorthogonal Auxin Inducible Trigger for Protein Degradation

Abstract: In biological systems, changing from one state to another can depend on gene repression, induction of new genes, and degradation of previously used proteins. The ability to quickly and inducibly degrade a signal, repressor, or other protein would greatly improve the sensitivity and timing of biological switches. Auxin, a plant hormone, is involved in nearly every aspect of plant growth and development. In the presence of auxin, auxin receptors induce polyubiquitylation of a targeted protein, leading to degradation by the proteasome. This hormone based protein degradation has previously been used to create inducible protein degradation in yeast and mammalian cells. However, a parallel system – using jasmonic acid as the small molecule inducer – is also found in plants. Our goal is to use both the auxin and jasmonic acid responsive pathways to develop a quick, efficient, and bioorthogonal system to control protein stability in yeast.

iGEM Medals for Foundational Advance Teams

Requirements for a Bronze Medal:

- Register the team, have a great summer, and plan to have fun at the Giant Jamboree.
- Successfully complete and submit this iGEM 2014 Judging form.
- Create and share a Description of the team's project using the iGEM wiki and the team's parts using the Registry of Standard Biological Parts.
- Plan to present a Poster and Talk at the iGEM Jamboree.
- The description of each project must clearly attribute work done by the students and distinguish it from work done by others, including host labs, advisors, instructors, sponsors, professional website designers, artists, and commercial services. Please see the iGEM 2011 Imperial College Acknowledgements page for an example. Link to page on your team's wiki: [Team:Nevada/Judging](#)
- Document at least one new standard BioBrick Part or Device used in your project/central to your project and submit this part to the iGEM Registry (submissions must adhere to the iGEM Registry guidelines). Please note you must submit this new part to the iGEM Parts Registry. Please see the Registry help page on adding new parts. A new application and/or outstanding documentation (quantitative data showing the Part's/ Device's function) of a previously existing BioBrick part also counts. Please see the Registry help page on how to document your contributions. To fulfill this criteria, you will also need to submit the part with its original part name to the Registry, following the submission guidelines.Part Number(s):

BBa_K1347003	[Received, Accepted]
BBa_K1347000	[Received, Accepted]
BBa_K1347002	[Received, Accepted]

Additional Requirements for a Silver Medal:

- Experimentally validate that at least one new BioBrick Part or Device of your own design and construction works as expected.Part Number(s):

BBa_K1347003	[Received, Accepted]
BBa_K1347000	[Received, Accepted]
BBa_K1347002	[Received, Accepted]

- Document the characterization of this part in the Main Page section of that Part's/Device's Registry entry.
- Submit this new part to the iGEM Parts Registry (submissions must adhere to the iGEM Registry guidelines)Part Number(s):

BBa_K1347003	[Received, Accepted]
BBa_K1347000	[Received, Accepted]

BBa_K1347002

[Received, Accepted]

- iGEM projects involve important questions beyond the bench, for example relating to (but not limited to) ethics, sustainability, social justice, safety, security, or intellectual property rights. Articulate at least one question encountered by your team, and describe how your team considered the(se) question(s) within your project. Include attributions to all experts and stakeholders consulted. Link to page on your team's wiki: [Team:Nevada/Outreach](#)

Additional Requirements for a Gold Medal: (one OR more)

- Improve the function OR characterization of an existing BioBrick Part or Device (created by another team or your own institution in a previous year), enter this information in the Registry. Please see the Registry help page on how to document a contribution to an existing part.Part Number(s):

BBa_K812010

[Not submitted]Not this team's part

BBa_K812012

[Not submitted]Not this team's part

- Help any registered iGEM team from another school or institution by, for example, characterizing a part, debugging a construct, or modeling or simulating their system.Link to page on your team's wiki: None iGEM projects involve important questions beyond the bench, for example relating to (but not limited to) ethics, sustainability, social justice, safety, security, or intellectual property rights. Describe an approach that your team used to address at least one of these questions. Evaluate your approach, including whether it allowed you to answer your question(s), how it influenced the team's scientific project, and how it might be adapted for others to use (within and beyond iGEM). We encourage thoughtful and creative approaches, and those that draw on past Policy & Practice (formerly Human Practices) activities.Link to page on your team's wiki: None