

iGEM 2012 Judging Handbook

iGEM HQ

Kim de Mora, Karmella Haynes, Meagan Lizarazo, Randy Rettberg



iGEM 2012 Judging Committee

Head judge	Karmella Haynes	Karmella.Haynes@asu.edu
Judging coordinator	Kim de Mora	Kim@iGEM.org
Americas West co-head judges	Jose Pacheco, Beth Beason	jose@igem.org bbeason@rice.edu
Americas East head judge	Tom Richard	trichard@psu.edu
Latin America head judge	Juan-Manuel Pedraza	jmpedraza@uniandes.edu.co
Europe head judges	Mark Van Passel Roman Jerala	mvanpassel@gmail.com roman.jerala@ki.si
Asia head judge	King L. Chow	bokchow@ust.hk
Head Poster judge	J. Chris Anderson	jcanderson2167@gmail.com
Head Software judge	Doug Densmore	doug.densmore@gmail.com
Head Human Practices judge	Ken Oye	oye@mit.edu

Message from Karmella Haynes, iGEM 2012 Head Judge

Welcome iGEM Judges of 2012! Congratulations on being selected as a judge for iGEM 2012. If you are new to judging, this experience may be your first evaluation of an iGEM team. If you are an experienced judge, there are new and exciting enhancements to assist with the evaluation process. First, our new rubric-assisted judging system reflects the same values that iGEM judges have embraced in previous years: originality, hard work, scientific rigor, usefulness, societal impact, and creativity to name a few. Second, you will be able to record scores in the newly redesigned judges' dashboard.

The new rubric includes a standard grading language that enables judges to easily express what they think about the quality of each aspect of the projects. For example, a judge will be asked 'Did you find the presentation engaging?' and can choose one of seven responses, ranging from 'Kept me on the edge of my seat' to 'Put me to sleep'. Grading language is much more meaningful than numerical scores, such as a 1 or a 7.

The rubric organizes key aspects of iGEM projects under the traditional areas, including the Presentation, Wiki, Poster, and Special Prizes. The judge will evaluate each aspect by selecting one response (from strongly positive to negative or absent) from a simple list.

One new feature that I am particularly excited about is iGEM headquarters' "judging machinery." Once every aspect has been scored, all assessments will be automatically compiled into a single comprehensive score sheet for each team. Scores will be used to generate team rankings. Therefore, every judge who evaluates any aspect of a team's project will contribute directly to that team's score and ranking. This new system is based on Ballinski and Laraki's "Majority Judgment" thesis.

The medal criteria are included in the beginning of the rubric, as an introduction to the team and as a way to view how each team have self-designated their project. The rubric will enable judges to evaluate each iGEM project with a single metric. Therefore scores, rankings, and various awards will be consistent. Unfortunately, judging meetings will no longer be as long or as tedious. That is a sacrifice we are willing to make for the success of iGEM!

This handbook describes guidelines for judging and judges' meetings. We hope that you find this handbook to be a convenient and invaluable resource. Thank you for dedicating your time and effort to serving the essential role of iGEM judge. You are perhaps their most important audience. The students' months of hard work would not be very rewarding without your evaluation and feedback.

Judging Roles and Evaluation Assignments

There are four types of iGEM judging roles. Project evaluations are organized into seven general areas in the new scoring rubric: **Overall Assessment, Medals, Wiki, Presentation, Poster, Best Human Practices Advance, and Special Prizes**. The areas that each judge **must** evaluate are listed next to each judging role below:

1. Track Judge – Overall Assessment, Wiki, Presentation, Medals
2. Poster Judge – Overall Assessment, Poster
3. Human Practices Judge – Best Human Practices Advance
4. Software Judge – *no rubric this year*

The seventh area, Special Prizes, may be evaluated by any judge who feels that he/ she can contribute valuable input.

In addition to assigned areas, any judge may also evaluate unassigned areas if that judge feels that he/ she can contribute a valuable assessment. For instance, a Poster Judge may evaluate a Wiki in addition to his/ her assigned areas.

How Teams are Scored

Judges will score specific aspects under each area. Judges will use a pre-written iGEM grading language to quickly express what they think about the quality of each aspect. For instance, under the Presentation area, one aspect written as '**Did you find the presentation engaging?**' has seven scores, ranging from '**Kept me on the edge of my seat**' to '**Put me to sleep**'. If this sounds a bit complicated, don't worry. Everything will be displayed on an interactive electronic (or paper) score sheet so that all the judge has to do is point and click (or draw a circle) to select scores.

Special Prizes are for outstanding/ exceptional/ exemplary team performance. Not all teams need to be assessed for every special prize and consequently only nominated teams will be evaluated based on the special prize aspects. Teams are automatically nominated for special awards when at least one judge selects a score ranging from strongly positive to negative for any special prize aspect. If all judges select 'No grade/ Not Applicable' for all aspects, the team will not be nominated.

How Teams are Ranked

Once every aspect has been scored, all assessments will be automatically compiled into a single comprehensive score sheet for each team. Rankings for all prizes, and advancement to the World Championship, will be generated by the iGEM judging machinery.

How Prizes and World Championship Advancement are Awarded

The judges will use the machine-generated rankings to make final decisions during their meetings. Please note that the machine-generated rankings do not dictate a final decision. Instead, the rankings are intended to organize all of the judges' input in an informative way, and to assist the judges in making award decisions. Final award decisions will be made by either a special committee or by the entire judging panel.

<i>For this prize/ award</i>	<i>rankings will be generated from these scores</i>	<i>and the final decision will be made by</i>
Best Human Practices Advance	Best Human Practice Advance	Human Practices committee
Best Poster	Poster	Poster committee
Best Wiki	Wiki	All judges
Best Presentation	Presentation	All judges
Best BioBrick Measurement Advance	Special Prizes - Best BioBrick Measurement Advance	All judges
Best New BioBrick Part (natural)	Special Prizes - Best New BioBrick Part (natural)	All judges
Best New BioBrick Device (engineered)	Special Prizes - Best New BioBrick Device (engineered)	All judges
Best New Standard	Special Prizes - Best New Standard	All judges
Best Model	Special Prize - Best Model	All judges
Best Software Tool	Manual scores (this year)	Software committee
World Championship Advancement, Regional Finalists, and Regional Champion	Overall Assessment and TBD	All judges

Table 1. Prize table. Please note that special prizes will be awarded based on the special prize category and the Overall category, with a weighting that has yet to be determined at the time of publication.

How Bronze, Silver and Gold Medals are Awarded

For 2012, we have included the medal criteria in the beginning of the general rubric. Team self-designated Medal criteria are available at the beginning of the rubric so judges familiar with medal assessment can start their evaluation there. The Medal criteria come directly from the teams judging forms, along with the teams own self-designated medal award (Gold, Silver, Bronze or no medal). Judges can choose to accept this award, or change it based on their own evaluation. Medal scores will be judge-determined, and judges will be able to use this data to consider discrepancies and make final medal decisions.

Timeline Overview - Scoring and Awarding

We will be distributing judging assignments just after the wiki freeze, giving judges just over a week to complete the pre-jamboree evaluation. Before the jamboree, Track Judges must assess the first two areas, Overall Assessment and Wiki, and start thinking about Special Prizes for teams. Each Special Prize has an additional set of aspects, but teams need not be assessed if their work isn't strong enough in that area.

During the jamboree sessions, judges evaluate the other areas, Presentation and/or Poster as well as confirming their scores for the Overall Assessment area. If teams have been selected for Special Prizes, then aspects for the special prizes will be available to that judge.

By the time the track meetings happen, each team should have been completely scored in the Presentation, Poster, Wiki and Overall Assessment areas. The Special Prize aspects will be discussed. There are no track prizes at the regional jamborees, so the track meeting will focus on finalizing data entry and on Special Prizes.

The majority of the final judges meeting will take place based on results calculated by the judging machinery. This machinery will display the top 3 teams for each of the machine-generated special awards, a ranked list of all the teams to determine advancement to the world championship, and a list of the top 8 regional finalists for a vote for the award ceremony presentations.

The scoring and awarding process occurs during five phases.

1. Before the regional jamboree
2. During the regional jamboree
3. The judges focus meetings
4. The judges final general meeting

5. The judges Sunday award ceremony meeting

At each phase and after each evaluation, information must be entered into the judging dashboard. This information will then be submitted to the iGEM judging machinery.

Phase 1 - Before the regional jamboree

Scoring

Track Judges will review the teams' judging forms, evaluate the Overall Assessment, Wiki, and Medals, review the Special Prize areas at their own discretion, and enter scores into judging ballot. Scores will not be final at this point.

Human Practices Judges will evaluate the Human Practice Advance pages of the teams' wikis and enter scores into the judging ballot.

As a result, preliminary nominations for special prizes will be accomplished for Best BioBrick Measurement Advance, Best New BioBrick Part (natural), Best New BioBrick Device (engineered), Best Model, Best New Standard, and Best Human Practices Advance. We recommend that judges with expertise in the following areas focus on the corresponding Special Prizes: wetlab assays for measurement; BioBrick part submission and Registry quality; scientific validity, publication, and data integrity; computational models; RFC quality.

Phase 2 - During the regional jamboree

Scoring

The following scores must be completed before the judges focus meetings.

Track Judges will evaluate Presentations and enter scores into the rubric. Scores that were entered during Phase 1 may be updated.

Poster Judges will evaluate Posters and Overall Assessment, and enter scores into the rubric. Human Practices Judges will evaluate the teams' Human Practice Advance work during the presentations and posters.

Software Judges will evaluate the teams' software projects using their own scoring system..

Phase 3 – The judges focus meetings

Scoring

Track Judges will discuss teams in the track that warrant special prizes. The judges will record scores for the Special Prize attributes. Nomination scores must be finalized at this point. Teams cannot be nominated for special awards during the final general meeting. This must be done by the end of the track meetings. Judges who nominate teams for special prizes should prepare a short two minute summary of why that team should get the award.

Awarding

Track Judges meetings – Medals: Team medal scores will be generated by the judging machinery based on some of the scores from Overall Assessment, Wiki, Best Human Practices Advance, and BioBrick Parts areas. Discrepancies can be identified and discussed by the Track Judges during their meetings. In the event of a discrepancy, where all judges agree that a team should be given a different medal, this decision can be reported to the head judge or iGEM headquarters. At this point, the medals decisions will be **final**.

Human Practices meeting – Best Human Practices Advance: Human Practices judges will evaluate the best advance in human practices, the special safety commendation and the HP gold medal criteria for each team. HP judges will also evaluate any biosafety and biosecurity issues. The winner of the Best HP Advance will be entered into the judge's dashboard. This decision will be **final**.

Poster Judges meeting – Best Poster: The judging machinery will provide the top ranked four posters. The winner will be discussed and chosen during the Poster Judges meeting and entered into the judge's dashboard. This decision will be **final**.

Best Software Tool: Software judges will decide on the best software team in the track and the best software tool (contingent on there being enough software teams in the region to warrant judging). This decision will be **final**.

Phase 4 – The judges final general meeting

Awarding

Best Wiki, Best Presentation, etc. (See Table 1): The top three teams for these special awards/prizes will be provided by the judging machinery for discussion. Note: teams cannot be nominated for special awards during the final judges meeting; this must be done in the Judges Focus meeting or before.

World Championship Advancement: Judges will examine the machine-generated top teams, decide if the machinery is correct and vote secretly on the list of advancing teams. The judges will not know which teams advance until the following day. The number of advancing teams varies by region as shown in the table below:

Region:	No. of teams
Europe	18
Asia	17
Americas East	14
Americas West	8
Latin America	5

Table 2: Number of teams advancing to world finals per region.

Regional Finalists: This secret vote will also select the three regional finalists who will give their presentations again during the award ceremony on Sunday. Again, the judges will not know which teams have been selected to present during the award ceremony, until the event.

The judges Sunday award ceremony meeting

Regional Winner: After the 3 top-ranked teams have given their presentations on Sunday morning during the awards ceremony, the judges will leave the room and meet to discuss the teams and decide on the winners by a show of hands. No judging machine will be used to determine the final winner.

Final words

The 2012 judging committee has worked hard to design and agree on this new evaluation system. HQ has worked hard to program and test it in time for the jamborees. It represents a substantial change in how judging is recorded and will hopefully lead to greater consistency across all regions. We know it won't be perfect but it is a big step in our goal to "make iGEM better" every year. At the end of the day, the judges word is final.

We encourage you to send comments/feedback to judging@igem.org (with Judging Rubric Feedback in the subject line) as we value your feedback and experience of this new system. We will endeavor to include feedback into the new and improved 2013 rubric!

Rules/Notes:

- Judges need a computer/tablet/web interface to fill in matrices. Paper rubric sheets can be provided for record-keeping, but this information must be entered into the online ballot according to the timeline described above.
- Nominations for special prizes will be **closed** before the focused judges meetings. Comments describing team performance can still be entered but additional nominations will be **closed**.
- Judge meetings after sessions are now called 'Enter the Matrix' meetings, not track meetings. You must fill in as many evaluations as you see fit in your track, otherwise it may be difficult for your opinions to be heard.

FAQ

We've broken down the questions section into judging, awards and protocol questions. This is the first edition of the judging handbook so the FAQ section is incomplete. If you have any further questions, or questions that you have answered and want to include, please email kim@iGEM.org with [iGEM 2012 Judging Handbook](#) in the subject line!

Judging questions

Q. How/Where do I start?

A. By logging into your judges dashboard. Go to the [iGEM main page](#). On the right hand side of the page, there is a Judging page, with a link to your [Judge's Dashboard](#) at the bottom. Click on your name, and you're good to go!

Q. Hi iGEM, I'm a poster judge. Can I evaluate a team's presentation?

A. Yes! If you go to a presentation and you want to evaluate what you saw, go to your judges dashboard and enter your evaluation into the [presentation](#) category for that team.

Q. Hi iGEM, I'm a human practices judge. I want to evaluate a team's presentation and overall categories, but don't want to assess parts. Will my evaluation still count?

A. Yes! You don't need to fill in every box in a category for your evaluation to count. If you don't feel qualified to assess the quality of a team's parts (or other aspect) you can leave those aspects blank.

Awards questions

Q. What happened to the track awards? There are no track awards mentioned?

A. Track awards are only presented at the world championship in Boston, we do not award them in the regional competitions.

Q. How do I nominate teams for special awards?

A. Ticking any box in a special award criteria (other than N/A) will designate a team for a special award. However, the special awards will be evaluated on the strength of all aspects in the prize category (and maybe one or two more from overall) so, selecting a team by nominating them in a single aspect probably won't help them win the award.

Protocol questions

Q. I didn't nominate any teams for special awards during the judging sessions or the track meeting. Can I still do this in the final judges meeting.

A. I'm afraid not. To make judges think carefully about which teams deserve nomination and not highlight teams at the last minute, you must assess teams based on the award aspects before the meeting.

Q. I've evaluated the wikis in my assignment, but haven't looked at the awards yet. When should I do this?

A. Teams can now be nominated for awards from the second you get your assignment! If you don't do this before the jamboree, have a look over the special award criteria and evaluate teams during their presentation, or in the 'enter the matrix' meeting afterwards. The last opportunity to nominate teams will be during the judges track meeting, before the final judges meeting.

Q. I'm a poster judge. All judges can evaluate posters, so how will we determine the winner?

A. During the poster judge meeting, you will be provided with information on poster judge assessment and also what the other judges thought of the posters. You will be provided with this information, but it is ultimately up to your judging team to decide the winner.

[1] The number of teams advancing to the world final will vary by region.