Preparing A Successful First Regional Contest

**Tom CaPaul, RCD Pacific NW Region
(British Columbia, Washington, Oregon,
North Idaho, Northern California, Hawaii)**

Welcome to Beijing!
Huān yíng lái dào Běi jīng!
欢迎来到北京!
The 2018 World Finals is hosted
by Peking University and CYSC.
It is sponsored by Founder Group
and JetBrains.

Background

Tom CaPaul, MS

- RCD Pacific NW Region 2011-Present

- ACM-ICPC coach since 2000, PacNW Head Judge 2004-2012

- Sr. Lecturer in Computer Science at Eastern Washington University

- tcapaul@gmail.com Or tcapaul@ewu.edu

- Host multiple local contests yearly with schools in area as well as with schools from afar

- Led a Senior Capstone team in building a web interface for PC^2 contest software (http://www.ecs.csus.edu/pc2)

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Who's Who

❑**Bill Poucher** – ICPC Executive Director, aka, "Head Honcho"

❑**Lisa Donahoo** – Contest Manager, helps with almost everything

❑**Jeff Donahoo** – ICPC Deputy Executive Director

❑**Roy Andersson** – Director-Regional Contests, deals with all problems

❑**John Clevenger** – ICPC Technical Director

❑**Jo Perry** – Director of Judging

❑**Professor Jianhua Lin** - 2018 World Finals Director

Types of Contests

❑**Single site** – all teams come to one site on the same day

❑**Multi-site/Single-day** – several contests within one region happening at the same time. Scores are merged and listed as one site.

❑**Multi-site/Multi-day –** several sites hold the contest on different dates with different problems. Scores are merged at the end, just like multi-site/single day sites.

Types of Contests (cont'd)

❑**Tiered** – preliminary contest(s) followed by final contest, with only selected teams moving on to the next tier. Each Tier could be single site or multi-site.

Types of Judging

❑Single site – the only decision is to use automated judging or humans.

❑Multi-site – three choices:

▪Automated – little to no decision making by humans

▪Human centralized: judges are physically at one site, problems submitted via internet (we use this choice at the PacNW Regional Contest); automation is used but humans have final say

▪Human localized: judges may be at multiple sites

  ▪A difficulty here is to make sure all judges are returning the same judgments – requires lots of phone/IM

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Which Contest Model?

❑ Which contest model is right for your region?

❑ Many factors:

▪History – how has it been done in the past?

▪Geographic distribution of teams – are most of your teams within 2-3 hour drive?

▪Volunteer sites – multi-site contests need multiple host schools (it can be challenging to get schools to host) (finding schools willing to host multiple years is ideal)

Which Contest Model? (cont'd)

❑Single site regionals are the easiest to manage.

❑Multi-site contests add a **huge** amount of overhead. Instead of managing one contest, you are managing a contest at each distributed site.

❑Multi-day and tiered contests also require more management.

First Decisions

Select contest date(s)

❑All regionals must be completed by mid-November (date is provided in RCD notebook)

❑Try to avoid holidays

❑Other conflicts:

▪If held at a university, sports events may cause traffic/parking/hotel problems

▪Standardized tests

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First Decisions
How many teams will you allow?

❑Allow as many *universities* as you possibly can

❑Allow as many *teams* as you possibly can

▪Space limitations may require a limit, e.g. allow n teams from each school, and if space allows, start adding the n+1 teams (in order of application)

❑Important Note: Teams may only compete in ONE region

First Decisions

Multi-site Contests: How many sites?

❑ Each site should have a relatively large number of teams (no less than 20) or you do not need that site.

❑Exceptions:

▪Travel difficulties – e.g. time of year, distance (Hawaii is one of the locations in my region)

▪Visa problems if contest crosses international (this is the case in my region) boundaries

First Decisions
Hardware / Software Selection

❑What languages will you allow? World Finals supports Python, C, C++, and Java. You must decide if it makes sense for your region to allow languages other than those (Javascript, C#, etc.) (more language support may encourage more schools/teams to compete)

❑What hardware/OS will each site have? Consistency is very important; BTW, teams will want to know all those details so make sure you have them available)

❑What software will you use for running the contest?

▪PC^2

▪DomJudge

▪Kattis (proprietary so you may need to bring Kattis team to your site)

▪"home grown"

Key People
Regional Director (YOU)

❑ **Responsible for**

▪ Selection of contest date (other factors)

▪ Selection of software and system

▪ Recruiting volunteer sites

▪ Budget

▪ Registration

▪ Orders plaques, prizes (if you do this), gifts, *t-shirts*?

▪ Make schedule for contest day

▪ Overall success of the contest

▪ DELEGATE where possible!

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Key People
Site Director(s)

❑The person who will handle local set-up at each site

❑**Successful** coaches often make good site directors

▪Provide a guide book for them, if possible (see the one for my region at: http://www.acmicpc-pacnw.org/SiteDirGuide.htm

❑Must be someone willing to commit to "doing a good job"

❑Responsibilities may include

▪Selection of local judge(s)

▪Selection of local system person(s)

▪Local arrangements (contest room, meeting hall, catering, etc)

▪Recruitment of volunteers (balloon runners, registrar, etc)

▪Web site for his/her contest site (which should contain itinerary, map, parking information, etc.)

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Key People
Head Judge

❑Person who understands the contest

❑Person who can commit to the time required

❑Best if this person accepts multi-year commitment: consistency is key

❑Can use someone from industry or academia

▪Some regions prefer not to use current coaches to avoid conflict of interest

▪However, many regions do and have had no issues

❑Responsible (with other judges) for:

▪Writing the problem specification (clear)

▪Writing the test data (clean and robust)

▪Writing the solutions (in all languages your contest will support if possible)

▪Final authority on judging decisions during the contest

❑Must be on site for the actual contest

Key People
Problem Writers/Judges

•These people assist the head judge in preparing the problem set:

–Writing problem statements

–Solving problems

–Verifying I/O

•It helps if the judge staff do the problem writing (or at least write solutions to the problems), so they are familiar with each problem when judging

Key People
Regional Systems Administrator

- Especially critical for multi-site contests

❑ Responsibilities may include

▪ Setting up PC^2 (or whatever contest software you are using)

▪ Configuring team and judge computers

▪ Performing a test contest

    ▪ Preferably 2 weeks prior to contest date

    ▪ Tests connectivity and software

▪ Must be available for the actual contest

▪ Overseeing system preparations at all contest sites

Key People At Each Site
On-site Registrar

❑ Often ACM club volunteer

❑ Registers teams on site on contest day:

▪Prints and gives certificates, badges and t-shirts to each team

▪May or may not take fees – this is up to you as to when/if you require fees

Key People At Each Site
Local System Administrator

❑Communicates with Regional Systems Person

❑Responsibilities include

▪Setting up contest system at the site

▪Being present for **test contest**

▪Being present at site on contest date (to help with any systems problems)

▪This person plays a key role as s/he may need to interact with IT department at that site to get ports opened for testing and for the day of the contest

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Communication Lines
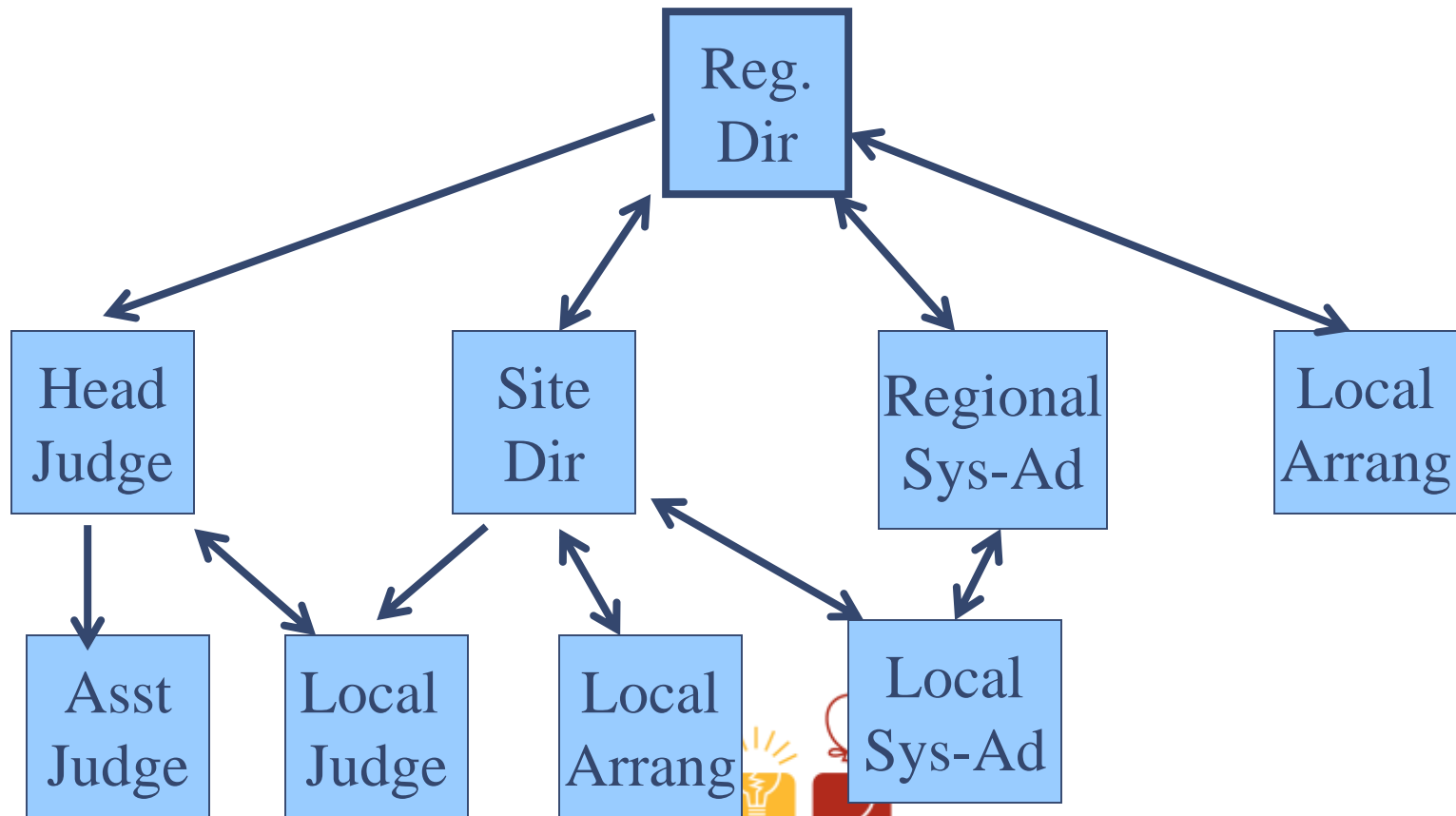
Other RCD Duties
Contest Registration

❑Coaches register teams on ACM-ICPC web site

❑You (or someone) mark teams as approved/paid

❑You determine registration costs and payment methods

▪You can require pre-pay, or accept payment on the day of the contest (this may be harder for multi-site contests)

▪You MUST provide receipts for payment

▪You may want to recruit a central registrar to handle all of the registration duties (marking teams approved, writing up receipts, mailing receipts, doing bank deposits, etc) – This should be someone you TRUST!!

▪Our region (PacNW) has PayPal support (almost all schools use this to pay – it may be the best way to go)

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Other RCD Duties
Problem Set

❑ **Goals** for the problem set:
- 6-12+ problems
- Every team should solve at least one problem*
- No team should solve all problems
- Each problem should be solved by a team

❑ Each problem should have been solved by the problem writers in every language your contest allows (preferably by different people)

❑ The judge data and solution for each problem should be verified by more than one person

❑ ICPC may want your problems, I/O, and solutions after your contest is done, so be prepared to send those items their way (they post the problems online and students can solve those problems via the online judge)

* ***harder than you think!***

Other RCD Duties
Test Contest

❑ Used to find any problems, firewalls, software versions, etc. so you have time to correct them before the actual contest

❑About 2-4 weeks before the contest

❑"Mock contest": submit problems, clarifications, judgments

❑ Each site should have at least 2 team machines (central judging site needs at least 2 judge machines)

Other Issues
Fairness

❑Make sure all computers at all sites (including judges) have equivalent hardware (judge hardware can be better)

❑ For multi-site contests, if one site doesn't have room for all 3 team members at a machine, then you must decide whether all sites must limit access, as well. (Note: Use nearby classrooms if possible for team members doing desk/algorithmic work.)

Other Issues
Security

❑ Physical security for problem set – both electronic and print (make this clear to site directors when you run a multi-site contest)

❑ Collect all personal electronic devices from contestants (coaches should keep these items) and provide somewhere safe to store them

❑ Physically separate rooms for judges, systems, teams, coaches – no mingling!

❑ Staff Required: print runners, bathroom escorts, balloon runners (if used)

❑ Only balloon runners, print runners and systems personnel are allowed in contest room

❑ T-shirts or Badges – separate colors to identify, e.g.:

▪ White – teams

▪ Purple – coaches

▪ Orange – staff

▪ Blue – "special people"

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Other Issues
T-shirts

❑Need **at least** 2 weeks time for t-shirt makers (don't forget about time to ship to location!)

❑Need shirts for teams, judges, systems team, other staff/volunteers

❑Teams fill out sizes at the online site (though many teams don't, which is problematic: decide what the "default" size will be if none is provided)

❑For multi-site contests, need to mail out t-shirt at least a week before the contest (OR have each site order own t-shirts, they can get shirt sizes from web site – we do this in PacNW region)

Other Issues
Contest Web Site

❑Obviously, you should have a regional contest web site

–Include information/links to sites in your region

–Include rules, hardware specifications, information on judge responses, how to protest

–Include a registration page

–Post results

–See http://acmicpc-pacnw.org

❑For multi-site contests, each local site should have a web site with information such as:

▪Directions

▪Parking

▪Hotels

▪Contest Day Itinerary

Other Issues
Miscellaneous

❏ Parking – should post info on local site web site and post signs for the contest

❏ Signage to help teams find the building/room where contest is

❏ Publicity for contest (TV, newspapers)

❏ Announcements of winners

❏ For multi-site contests, visit remote sites, if possible

▪ Helps to know the people there

▪ View contest areas to ensure suitability

Budget

❑Start up a checking account

▪Allows you to keep track of paid registrations

▪Allows you to keep track of expenses

▪Find out about non-profit status (501(c)(3) in US)

❑Registration fees are added to the ICPC funding to cover entire cost of contest.

▪Keep as low as possible, but make sure you can pay for everything you want at your contest

▪Some regions allow each site to determine the registration fee

▪Seek sponsorship from companies in your region – you can advertise them on your contest t-shirts (always make sure major ICPC sponsors are always listed first)

Budget

❑For multi-site contests, decide how much to allocate to the sites – based on the number of teams

❑Plan on paying for travel (hotel, food) for the head judge and judge team. It is important that they are on site if at all possible.

Budget

❑Other expenses (they add up!):

▪Printing costs

▪Food/drink

▪Balloons/helium (pricey now!)/ribbon

▪T-shirts

▪Prizes/gifts

▪Travel

•To contest site

•To next RCD Symposium / World Finals (If you can not make it to the next RCD Symposium, please send a representative in your place if at all possible)

Sample Schedule (Single Day)

❑ **8:00 – 9:00** – registration (give out badges, t-shirts, etc.).

❑ **9:00 – 10:00** – Orientation/rules briefing

❑ **10:00-11:00 –** Practice contest (this is a practice for judges and systems crew, too!)

❑ **11:00-12:00 –** De-briefing, Q&A, systems-re-set (clear all computers)

❑ **12:00-5:00 –** Actual contest (lunch served during contest)

❑ **6:00 –** Awards party (banquet/pizza)

Sample Schedule (Multi-day)

❑ **Friday:**

4:30 p.m. – 7:00 p.m. – Registration

7:00 p.m. – 8:30 p.m. – Practice contest

8:30 p.m. – 10:00 p.m. – Pizza Party and Q&A

❑ **Saturday:**

6:30 a.m. – 9:00 a.m. – Breakfast

9:00 a.m. - 10:00 a.m. – Line-up for contest

10:00 a.m. - 3:00 p.m. – Actual contest (lunch served during contest)

4:00 p.m. – Dinner Banquet and Awards

Questions?

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This presentation can be found at:
http://penguin.ewu.edu/cscd316