



# IHPCSS: Building Community for Short Training Schools

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## ABSTRACT

The International HPC Summer School (IHPCSS), a week-long event, brings together around 80 participants and 30 staff from different countries to raise awareness of High Performance Computing (HPC) and showcase career opportunities. It also provides an extensive mentoring program and networking opportunities. This paper discusses the challenges of cultivating community during a short event like the IHPCSS. Firstly, it outlines the development of key policies such as the Code of Conduct and Health and Safety Policy to ensure a safe and inclusive environment. Secondly, it presents a community-building framework focused on activities aimed at fostering networking among participants. Finally, it explores communication channels and educational platforms to encourage interaction. Our experience has shown that community building requires creation of an open and safe environment, setting of clear expectations and usage of multiple communication channels.

## CCS CONCEPTS

• **Computing methodologies** → **Massively parallel and high-performance simulations**; • **Social and professional topics** → **Computational science and engineering education**; **Informal education**.

## KEYWORDS

high performance computing, education and training, community building, mentoring

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## 1 INTRODUCTION

The International HPC Summer School<sup>1</sup> (IHPCSS) is an international collaboration between organizations from Australia, Canada, Europe, Japan, United Kingdom, United States, and South Africa. The event aims to increase the awareness and knowledge of HPC and highlight career opportunities, by bringing together about 80 students (typically graduate students and post-docs) and 30 staff members from around the world for a week of learning about HPC, computational science and Big Data analytics. Additionally, it offers an extensive mentoring program [1] and opportunity for students to establish and expand their professional network.

Creating a sense of community in a week long event is challenging and requires thoughtful planning and adoption of appropriate tools and processes. It's not only about selecting the appropriate communication channels but also about creating a welcoming, diverse and inclusive environment for all participants.

This short paper is divided into three main sections. In Section 2, we review the development of the Code of Conduct (CoC) and Health and Safety Policy (HaSP). These policies are essential in setting the expectations for the event and creating the foundation for a safe and inclusive environment. Section 3 will present a framework designed to enhance community building within IHPCSS, including activities such as icebreakers, receptions, goal-setting, programming challenges, social events, and group discussions. These elements are designed to foster meaningful connections among participants, cultivating a sense of belonging and collaboration. In Section 4 we present the evolution of the communication channels and education platforms for IHPCSS.

## 2 IHPCSS OFFICIAL POLICIES

As of 2024, the IHPCSS has adopted two policies to which every registered attendee must acknowledge and adhere to: a Code of Conduct (CoC) and Health and Safety Policy (HaSP).

### 2.1 Code of Conduct

Establishing a Code of Conduct for events is essential to clearly define and communicate the expected behavior of all involved and to promote a safe and welcoming atmosphere. The CoC is designed to cultivate professionalism, respect, and inclusivity, by mitigating and addressing inappropriate behavior. The CoC is applicable to

<sup>1</sup><https://ihpcss.org/>

all participants, i.e., staff, mentors, attendees, speakers—it provides a structure for enforcing rules and outlines the consequences for violations. By implementing a transparent and unambiguous CoC, event planners can effectively navigate challenging scenarios and ensure an enjoyable and inclusive experience for all attendees.

The first version of the CoC for the IHPCSS appeared in 2018. It was based on the example anti-harassment policy from the Geek Feminism wiki [2] and the template Citizen CoC from Stumptown Syndicate [3, 4]. Relatively unchanged through the years, the CoC was updated in 2023 with the addition of a “Resolution Process” section to document the expected process for handling a CoC report.

The main blocks of the CoC include:

- **Introduction and purpose:** overview of the purpose and objectives of the CoC, emphasizing inclusivity, safety, and respect for all participants.
- **Expected behavior:** outline of the expected behaviors for all participants, including treating others with respect and dignity, being collaborative and considerate, and adhering to rules and policies.
- **Unacceptable behavior:** this section defines unacceptable behaviors, such as harassment, discrimination, and disruption of events, and outlines examples of such behavior.
- **Consequences:** outlines the consequences for violating the CoC, including immediate compliance with requests to stop unacceptable behavior, possible expulsion from events without refund.
- **Reporting process:** provides guidelines for reporting unacceptable behavior, including whom to contact, what information to provide, and options for reporting anonymously.
- **Resolution process:** outlines the process for resolving reported incidents, including confidentiality measures, investigation procedures, and potential outcomes. This section was added in 2023.
- **License and Attribution:** acknowledges the sources from which CoC draws inspiration and provides contact information for further inquiries or discussions.

In the 5 years that CoC has been in place, there have been no reported violations at the IHPCSS.

## 2.2 Health and Safety Policy

A Health and Safety Policy for events is a set of guidelines and procedures designed to ensure the well-being of all attendees. The HaSP is important for event planning as it helps to create a secure environment, prevents harm to participants, and protects the reputation of the organizers. It also ensures compliance with local regulations, as event organizers, venue owners, and other stakeholders are responsible for the health and safety of attendees.

In 2023, following feedback from attendees at the IHPCSS22 in Athens and with the COVID-19 pandemic in mind, organizers introduced the initial version of the HaSP. As COVID restrictions have waned, we have removed the COVID-specific elements of the guidelines.

The main blocks of the HaSP include:

- **Introduction and purpose:** outline of the purpose and importance of the HaSP.

- **Accessibility:** emphasizes the commitment of the organizers to ensure that the event is accessible to all participants, offering accommodations and support as needed.
- **Responsibilities and recommendations:** specific responsibilities of both organizers and participants regarding health and safety.
- **Emergency and incident reporting:** outlines the procedures for reporting medical emergencies and incidents during the event, including contact information for designated organizers or local emergency services.
- **Commitments and review:** highlights the commitment of the organizers to promptly address any incidents or concerns raised during the event. It also includes a commitment to conducting regular reviews of the HaSP to ensure it remains effective and up-to-date with current regulations and best practices.

## 3 COMMUNITY BUILDING EVENTS AND ACTIVITIES

Through the CoC and HaSP the IHPCSS ensures a safe and respectful environment throughout the event. It also emphasizes community building with a variety of structured activities and events designed to stimulate connections and collaboration among participants. The Summer School program includes both formal and informal activities that support these objectives, as detailed below.

### 3.1 Icebreaker

Before the School, mentors are encouraged to connect with their mentees. To help kick off the interaction, we suggest an optional icebreaker activity. This activity, called “Two Truths and a Lie”, is designed to foster connections within mentoring groups before the event begins. Each participant shares three statements about themselves—two truths and one lie. By discussing and debating with each other, the group guesses which one is false. The game gives participants an opportunity to gain insight into each other’s personalities, preferences and experiences, laying the foundation for meaningful interactions at the IHPCSS, and ensuring that all students know at least one staff member (their mentor) before the Summer School begins.

### 3.2 Reception

Since 2013, IHPCSS has hosted kickoff receptions. These are a great way to build community at small events like the IHPCSS, as they provide a relaxed and informal setting for attendees to interact and network. Attendees can engage in casual conversation, exchange ideas, and make personal connections beyond the professional context. By creating a friendly atmosphere, receptions help people to network and form relationships, which is important for building a strong and supportive community. The welcoming reception is held on Sunday evening, before the event officially starts.

### 3.3 Goal-setting

At the start of the IHPCSS there is a dedicated session (often over lunch) where participants meet in their mentoring groups and discuss their goals for the week, covering topics like event logistics,

agenda relevance, skill development, professional inquiries, and personal challenges. This allows participants to share their expectations, needs and aspirations for the event. This session encourages interaction and collaboration among participants. It also sets a positive tone for the week ahead and encourages active engagement and participation, enhancing the overall experience for all involved.

### 3.4 Programming challenge

The programming challenge is an optional activity where participants, either alone or in teams, tackle a scientific optimization problem using what they have learned during the IHPCSS. Participants work on it in their spare time during the event, and at the end the fastest solutions are rewarded. This challenge encourages teamwork, problem solving and knowledge sharing. Additionally the friendly competition adds a fun element that brings everyone together even more. Overall it is a chance for everyone to apply what they have learned and unite around a common goal.

### 3.5 Social Events

The Schools are often hosted in interesting locations, so there are 1-2 social events focused on exploring the culture of the host city (e.g. museums, touristic attractions, historical sites). This event is often followed by a dinner where participants can continue to socialise and network in a relaxed environment. This social event plays a crucial role in community building by providing an opportunity for participants to engage beyond the formal environment. Exploring new places sparks conversation and collaboration, facilitating shared learning and enriching the IHPCSS experience.

### 3.6 Group Discussions and Workshops

The Summer School offers several formal activities to facilitate networking and rapid community building offered through the mentoring program, including Career Skills Breakouts (focused on different skills), One-on-Ones (private conversations with mentors on topics of their choice), and Resource Fairs (group discussions on specific topics).

### 3.7 Morning Runs

In addition to the formal activities, there are often many informal activities organized ad hoc, including optional morning runs. In addition to its fitness benefits, this activity allows the participants to explore the city and bond over a shared hobby. In 2023, a walking option was introduced to be more inclusive for all individuals.

## 4 EXPLORATION OF COMMUNICATION AND EDUCATIONAL PLATFORMS

Throughout the evolution of the IHPCSS, communication and education strategies have been continuously adapted to increase participant engagement and readiness. We employ different tools, platforms and media to keep all participants informed before, during and after the event. Below we briefly discuss the use of different communication channels and how that use evolved over 14 years of IHPCSS to ensure effective dissemination of information.

### 4.1 Public Website

The IHPCSS website serves as a public facing source of information about the Summer School. Each year, a new website is created for that year's school, containing information about the application process, the agenda, travel information, the CoC, and the HaSP. Originally the hosting organization or institution was responsible for hosting that year's page, but in 2019 we shifted to using subdomains of the main website for continuity. Additionally, the website contains links to past events and agendas.

### 4.2 Interactive Learning Platforms

Initially, the XSEDE Wiki served as a repository for educational resources. Then in 2017 there was a transition to HPC-Moodle<sup>2</sup>, hosted by the National Center for Supercomputing Applications at the University of Illinois at Urbana-Champaign. The HPC-Moodle is a structured learning environment that allows us to organize and deliver content efficiently, ensuring participants have access to relevant resources throughout the event and beyond. In 2019, there was an effort to separate the mentoring content from the main program and put all the necessary information on a separate, open-source web page hosted by GitHub. However, based on feedback from participants, this was more confusing than helpful. As a result we decided to stop using this approach and reintegrated the mentoring content into the HPC-Moodle.

### 4.3 Networking and Real-Time Communication

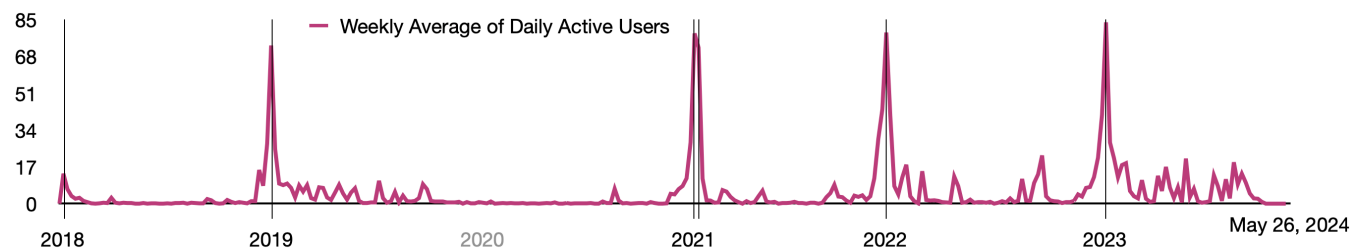
Although HPC-Moodle offers chat and forum functionality, its limitations, such as limited real-time messaging capabilities, requiring login credentials, and not allowing participants from different IHPCSS instances to mix, led IHPCSS organizers to explore other tools as the primary communication channel during and after the event.

Initially Facebook groups were set up to allow participants to self-organise and communicate about travel arrangements, social events, and to stay in touch after the event. IHPCSS staff noticed that the use of Facebook among participants started to decline in 2018, suggesting that they probably don't like having Facebook accounts. So the organisers started looking for alternatives, and in IHPCSS'19 they integrated Slack<sup>3</sup> into the IHPCSS toolkit. It provides real-time messaging capabilities and enables seamless collaboration and interaction between participants, mentors, and organizers. Organized by annual general channels, Slack serves as a central hub for discussions, announcements, and networking. The IHPCSS staff observed that the platform has increased communication efficiency and fostered a sense of community among event participants.

The Slack platform was first used in 2018 for communication between staff and was subsequently expanded to include students. Figure 1 shows a graph of daily active IHPCSS Slack users, averaged over a week. Only three IHPCSS staff members are active throughout the year, so this graph demonstrates that students are using Slack to connect beyond the Summer School. Since it was established, the IHPCSS Slack has been used to send more than 14,000 messages (of which 4,000 were sent during the Summer Schools). The IHPCSS uses the free Slack tier.

<sup>2</sup><https://www.hpc-training.org/moodle/>

<sup>3</sup><https://slack.com/>



**Figure 1: Daily active users on Slack, averaged over each week. Weeks of the Summer School events are marked (2 weeks for the 2021 virtual event) and show clear spikes in usage.**

#### 4.4 Video Conferencing Tools

Here we briefly describe some additional tools we have used to support digital communication and community, especially during the 2021 Virtual Summer School.

**4.4.1 Gather.** The Gather<sup>4</sup> web application is designed to virtualize physical space. Users are presented with a video-game like interface in which they pilot an avatar around a pre-designed space. The design of these spaces is open-ended and can look like anything from offices and conference rooms to gardens and dance floors. Users can interact by bringing their avatars close together, which will turn on their microphones and video cameras for a conversation. For IHPCCS21 (the only virtual IHPCCS), a virtual Gather space was designed and used for many group interactions. Several Gather rooms were set up for particular functions, including the poster sessions, small group breakouts, and extracurricular socializing.

**4.4.2 Remote Presentations.** Occasionally, last-minute complications have prevented presenters from being present for their scheduled sessions. In these scenarios, we typically use the Zoom<sup>5</sup> video-conferencing tool to allow speakers to present their content remotely. Zoom was also the tool of choice for the virtual IHPCCS21 sessions. Starting in 2022, we have broadcast our sessions over Zoom for students that have become sick while attending the Summer School, so they can view the content while remaining isolated. Otherwise, we do not broadcast or record our sessions for those not in attendance, to encourage in-person participation.

## 5 CONCLUSIONS

Creating a sense of community and establishing fit for purpose communication networks for short, international events, such as IHPCCS, is challenging and requires careful consideration. Insights derived from formal and informal participant feedback, as well as observations by IHPCCS staff, lead to several key conclusions:

- An open, welcoming, and nurturing environment contributes to the overall successes of the event. Setting expectations (CoC and HaSP) is as important as establishing adequate communication channels.
- Different tools or platforms may be needed at different event stages (before, during, or after) to fulfill different communication needs (e.g., announcements, content repositories, group or direct messaging, etc.).

- Providing the participants with direct messaging functionality helps them establish personal connections that are more likely to continue after the event.
- For well established and long running events, it is also important to periodically review the tools used to make sure they still provide the required functionality and are likely to be used by the participants.

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<sup>4</sup><https://gather.town>

<sup>5</sup><https://zoom.com>