

# Hacking for Defense®

Hacking for Defense (H4D) is a nationwide university program that leverages student teams to work on national security problems facing the Department of Defense and Intelligence Community. These students come from interdisciplinary backgrounds such as engineering, computer science, business, and policy.

Over the course of an academic semester (roughly 10-12 weeks), these students are taught how to apply the Lean Startup methodology to understand and work on a specific government problem.

## Problem Sponsor Role Overview

Problem sponsors are members from the Department of Defense or Intelligence Community who possess the relevant technical or professional expertise to mentor their students. They act as both the client and liaison, owning the problem the students are trying to solve and facilitating their investigation into its root causes.

Expectation	Purpose	Timing
Frequent communication with student teams	Involved Problem Sponsors are the #1 most important determinant in ensuring a student team's success. Your insights into the problem and government context and constraints are integral to helping them help you. The class is 10-12 weeks long and if they don't hear from you for a week, that's around 10% of the time lost that they could be working on your problem.	Weekly (3-5 hours), answer student teams within 48 hours
Primary points of contact	It is critical that primary points of contact do not change after the course begins. Student teams look to problem sponsors for guidance and answers to questions around the problem being solved. Changing sponsors mid-course has a negative impact on the student team's progress and is to the detriment of the sponsoring organization.	Consistent involvement with teams throughout the 10-12 week course
Facilitate introductions	Students will look to you to connect them to 15 people within your network who touch the problem at the start of the course. They will then leverage your connections to engage other stakeholders and expand the network.	Identify and prep 15 people and their contact information by the start of course

# Hacking for Defense Sponsor Journey

## Ahead of the Course

### Scope the Problem

Problem scoping is the iterative process used to confirm that a problem is appropriate for H4D and their student teams. It ensures a problem is clear to both government and student audiences, and can be researched within a limited time frame (10-12 week semesters.) By the end of this process, you will have a scoped problem that outlines your pain points, beneficiaries, and a clear desired outcome. *(See Appendix A for a Problem Statement Template (which is the format your problem will take on by the end of scoping.)*

### Frame the Problem for a Student Audience

Stories are often the best mode of framing a problem. If it is difficult to explain details of the problem manifesting itself in actual missions, think of how it occurs in a training event or think of an analogous situation to which they can relate.

It can also be helpful to look within your organization to learn about previous attempts to solve the problem. Sharing this information allows the students to learn why these solutions failed and how they can approach the problem differently.

### Prep your Network and Yourself

Get ready for day one! Ahead of the course, you may be connected with the university teaching team who will be leading the H4D class. They will help level set and provide direction to student teams throughout the course.

On your side, let people at work know that you will be tackling a critical problem with a student team. Use materials from the [H4D.us](https://www.h4d.us) website to introduce your organization to the program. The level of excitement and urgency your organization brings to H4D will be infectious. If your student team is inspired and feels supported they will do everything in their power to help you solve your problem.

### Facilitate Interviews

Ahead of the course, you must tap your network for 15 people relevant to the problem and secure their contact information. Helping teams learn about the problem through the lens of government users is an essential step to them understanding your problem and your unique constraints.

Let your connections know students will be reaching out to them and provide them with the Problem Statement. On Day 1 of the course you will be providing warm introductions and the contact information to student teams. Teams will use your network to learn about the problem from different perspectives. (See Appendix B for the interview email template for outreach to your network)

## During the Course

### Prepare for Each Week's Focus

Over the course of the semester, students will learn how to use the Mission Model Canvas. Each week of the class focuses on different parts of the canvas. Students are expected to test their assumptions for each of the boxes on the canvas through customer discovery. Familiarize yourself with each box on the canvas (see Appendix C) and read on below for ways you can best help your team.

**Beneficiaries:** Explain your position in the organization. Explain what jobs are required to complete and the things for which you are responsible. Provide as many contacts for your team to contact.

**Value Proposition:** Remain in close contact and continue to provide additional contacts. Continue to talk about what problems you have and the pains associated with those problems. Don't push any specific solutions.

**Mission Achievement:** Help your team understand the nature of military metrics of success. Clarify where people are in the organization if you notice any misunderstandings. Ask them to explain your organization and test their understanding of your goals. Give feedback on their understanding of the problem and their Minimum Viable Product (MVP).

**Buy-in & Support:** To find those who will help their solution become a reality, the students will need to understand your organization and its internal politics. Help your team pinpoint influential members within your organization. Be clear with them about which decisions you make vs. which you make recommendations for vs. those over which you have influence. Be clear with them on who influences your decisions and who can make recommendations to you. Continue to give feedback on their understanding of the problem and their MVP.

**Deployment:** Students are asked to figure out how they will deploy the solution, whether it is physical or digital. Provide them with as many avenues to deployment as

you can; let them do the work of deciding which will work most efficiently based on their knowledge of who “owns” the problem. Continue to give feedback on their understanding of the problem and their MVP. Connect them to more people if needed.

**Activities, Resources, & Key Partners:** Internally, begin thinking of a plan to continue work on the solution if your organization wants to take steps to pursue deployment. Give teams realistic estimates of the timeline for various parts of the deployment process.

**Mission Budget:** Talk to your team about your H4D experience. Tell them what has been most or least valuable. Clarify and wrap up outstanding questions as soon as possible. Talk about possible follow on work and the resources available to you.

### Complete Surveys

Surveys will be sent out midway and at the end of the course to learn about student progress and your satisfaction with the program. Please complete these surveys in a timely manner. Additionally, survey responses are critical to defining potential post-course options for student teams and your problem.

## After the Course

### Consider Your Post-Course Options

The goal of the H4D program is not to develop transition-ready solutions. In most cases, student teams will provide a 360 degree view of your problem and outline a potential solution pathway. However, in some cases they may be ready to hand off the problem with concept for your further development, or are interested in further working on the problem. The following are NSIN designed programs for H4D student teams who are intent on working on your problem after the course ends.

### Vector

Vector provides a pre-incubator for student teams that want to continue working on their solution pathway but have not yet formed a company. Teams will compete for awards to continue developing their solutions.

### Impact Fund

NSIN's philanthropic program is the Impact Fund, a twice-yearly grant program intended to inspire, support, and build mission-driven entrepreneurs as they solve complex, real-world national security, social, civic, and environmental problems. The Impact Fund is made entirely possible by generous sponsors.

### **Maker**

The Maker Pilot is a concept-to-prototype focused program that seeks to accelerate the development of a concept prototype and rapidly/cost-effectively validate it to see if the solution has merit for future investment from a DoD customer. The Maker Pilot provides DoD customers with a resource to investigate the merit of an early stage concept solution before committing funding for a full-scale prototype development.

### **X-Force Fellows**

X-Force provides opportunities for entrepreneurs and technologists to solve real-world national security challenges in collaboration with the U.S. Military. The X-Force Fellowship is full-time, in-person, paid internship that runs from early June to mid-August. Student teams are embedded with military command project sponsors for the duration of the project.

If you believe that a solution idea has promise and should be progressed or further worked on, please email [spera@bmnt.com](mailto:spera@bmnt.com) to set up a discussion on future options for you and/or your student team.

## **Questions? Comments?**

You now know what it takes to be a great problem sponsor. Following these steps will maximize your success in the Hacking for Defense program.

Questions? Email us at [contact@h4d.us](mailto:contact@h4d.us) or check out our website [www.h4d.us](http://www.h4d.us).

# Appendix A: Problem Statement Template

## Problem Title

Short, catchy title describing the challenge (less than 10 words)

## SPONSORING ORGANIZATION

DoD organization of the sponsor (ie. United States Navy, United States Air Force...)

## CHALLENGE

1-sentence description of what the students are being asked to accomplish, making clear what the need is without prescribing a solution.

## IMPACT

To the point description of larger impact of solving this problem (ie. \$, FTE, lives saved...)

## RELEVANT CONTEXT

These bullets may include: 1) Basic facts or context required to understand the problem; 2) An anecdote of a time this problem occurred; 3) An attempt to solve this problem that failed; or 4) A relevant current event.

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## POTENTIAL BENEFICIARIES

End-users, people who experience the pain of this problem on a regular basis. Can list multiple beneficiaries. (ie. Flight Technicians, Pilots...)

## TEAM RECOMMENDED SKILLSETS

Any skillsets that are likely necessary to have somewhere on the team to have a successful project (ie. Material science, UX/UI...)

*Note: Student teams are interdisciplinary and will represent a variety of skillsets. We do not require certain skillsets to be on the team so as to not prevent participation or limit the creativity of the team.*

## RESOURCES

Any material that may help the student team gain context and start the conversation with the sponsor. (ie. news articles or press releases, white papers, relevant policies, photos...)

[Links to Resources](#)

[Links to Resources](#)

### **PROBLEM SPONSOR**

The problem sponsor acts as both client and liaison, owning the problem the students are trying to solve and guiding their proposed solution while also facilitating their investigation into its root causes. They play an active role during the course.

Rank / Sponsor Name

Title, Department

DoD Organization

Location

Email

### **SENIOR LEADER**

This is someone in a leadership position who is aware that the problem sponsor is working with a student team and supports the process.

Rank / Senior Leader Name

Title, Department

DoD Organization

Location

Email

### **CLEARED CONTACTS**

Much of the program's success hinges on the team being able to "hit the ground running" by immediately speaking to people who experience this problem. By including a list of contacts for the team, your problem gets a strong start at the beginning of the semester and can be pushed closer to a solution throughout the semester!

Interviewee Name

Title, Org

Short Description of Interviewee / Reason for Selection

Email

Interviewee Name

Title, Org

Short Description of Interviewee / Reason for Selection

Email

Interviewee Name

Title, Org

Short Description of Interviewee / Reason for Selection

Email

## Appendix B: Interview Email Template

Hi [Recipient],

I am gearing up to work with students on a program called Hacking for Defense (H4D). H4D connects difficult government problems to university teams in an effort to get a fresh perspective on the challenges our organization is facing.

The team will be helping me look into [Problem Title], attached.

I really think they would benefit your perspective on the issue. Can my student team reach out to you when the semester starts for a quick phone call?

Thank you for your help in getting us one step closer to solving this problem!

Best,  
[Your Name]



## Appendix C: Mission Model Canvas

<p><b>Key Partners</b></p> <p>Which outside partners or suppliers do you need to perform the activities that you cannot complete internally?</p> <p>Are they new or existing?</p>	<p><b>Key Activities</b></p> <p>What activities need to be completed in order for the value proposition to be realized.</p> <p>What is crucial?</p>	<p><b>Value Proposition</b></p> <p>What are you offering them?</p> <p>What problem are you solving for them? Or in other terms: What pains are you solving and how?</p> <p>What gains do you give them?</p>	<p><b>Buy-In/Support</b></p> <p>Whose buy in is needed to deploy the product?</p> <p>What's required to support it once deployed?</p>	<p><b>Beneficiaries</b></p> <p>Who are the beneficiaries/ customers/ stakeholders are you serving?</p> <p>Are they inside or outside your organization?</p> <p>Which jobs do they really want to get done?</p>
	<p><b>Key Resources</b></p> <p>Which <b>internal</b> resources do you need to perform the activities?</p> <p>Are they new or existing?</p> <p>Resources are separated into Physical, Financial, Human, Government, and Intellectual</p>		<p><b>Deployment</b></p> <p>What will it take to deploy the product/ service from the current MVP to widespread use?</p> <p>What constitutes a successful deployment?</p>	
<p><b>Mission Budget/Costs</b></p> <p>What is the resulting cost structure? Which key elements drive your costs?</p> <p>How will the timeline of deployment affect the timing of financial resources?</p>		<p><b>Mission Achievement</b></p> <p>How do your beneficiaries measure Achievement?</p> <p>How do those you need Buy-In and Support from measure Mission Achievement?</p>		