# NSF POSE Info Session

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Academic and industrial researchers worldwide are extensively using the open-source model to make research artifacts such as software, tools, and prototypes openly available with a goal of enabling collaboration and catalyzing further innovation

# OSPO@GT Core Objectives

## Build an OSS Ecosystem on Campus

### Establish an OSS Standard for GT

**Develop** and share best practices for open-source software development at the institute level via an OSS research hub.

**How to** create an open-source project.

**How to** choose a license.

**How to** develop an open source community.

### Training

**Create and support** a virtual summer internship experience targeted to introduce students to new open-source research projects and experiences

**Technical Training & Workshops**

### Sustainable OSS

**Build** the university's capacity to curate, manage and maintain open-source software throughout the software lifecycle

**e.g., Archival techniques** to preserve open-source software

## Outreach to Local Universities

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# About Session

- NSF POSE's vision
- Target Applicants
- Submission Requirements
  - Phase I versus Phase II submissions
- OSPO Resources for POSE applicants

Note that this presentation is meant to help supplement existing NSF resources. We strongly encourage you to review all NSF resources and solicitations as the definitive guide for proposals.

https://new.nsf.gov/funding/opportunities/pathways-enable-open-source-ecosystems-pose

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# About NSF POSE

- Call for proposal solicitation [link] (all pictures in this slides deck are from this link)
- Due 9/5/2024
- Vision
  - Forming managing organizations
  - Ensuring a broader and diverse adoption of open-source products
  - Enabling collaboration and catalyzing further innovation
  - Focusing on technologies with broad societal impact
- OSEs must use a distributed development model (e.g., GitHub, GitLab)
- POSE Program Doesn’t
  - Support development of open-source research products
    - Including new core features
  - Support development of a data repository
  - Support the development of products that are intended for profit

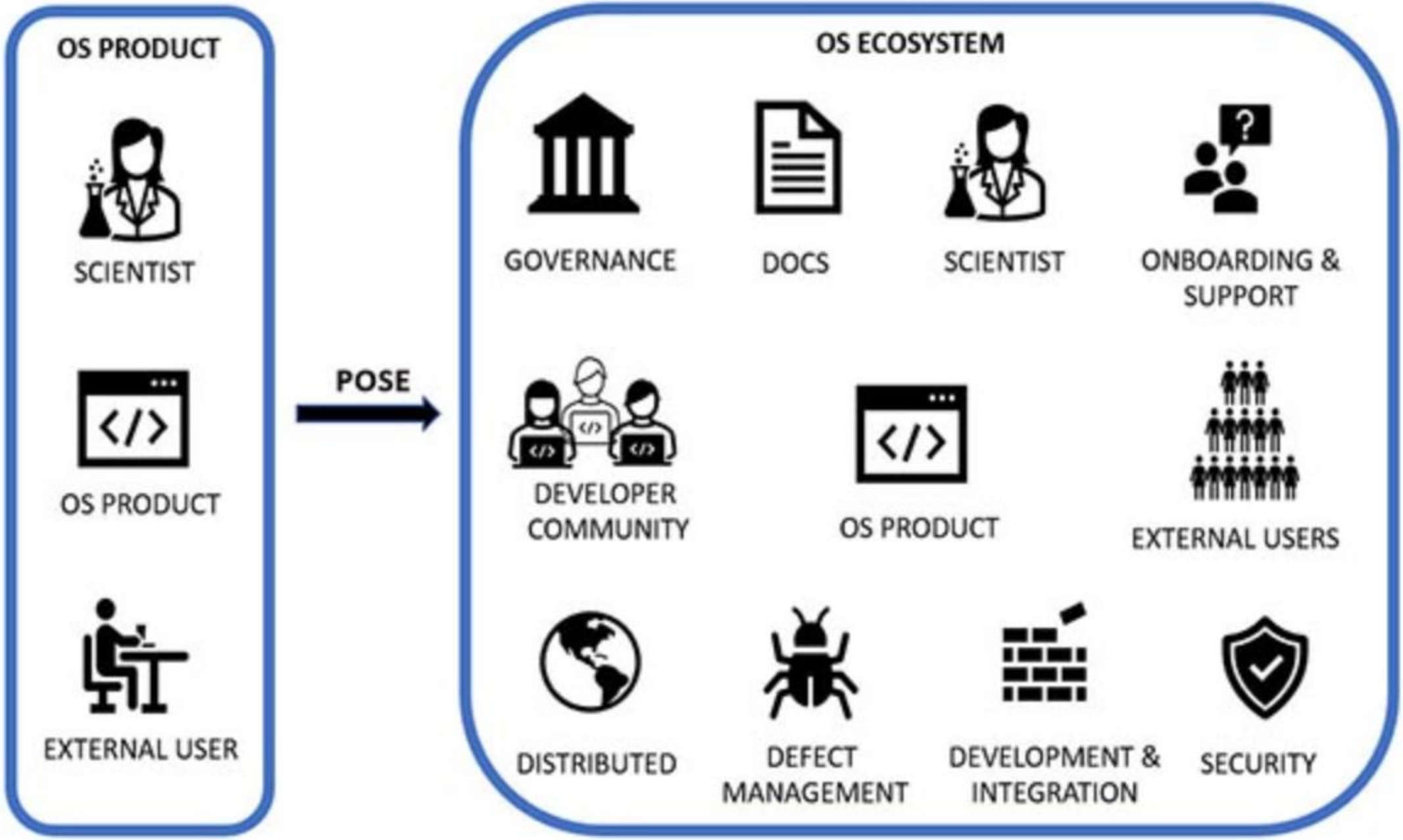
# Target Applicants

- Have an existing open-source product/class of products
- Have active users outside of the founding team
- Need to build open-source ecosystems
- Willing to take responsibility for creating and managing the processes and infrastructure

# What is Open-Source Ecosystem (OSE)

- A self-sustaining organization
- Enables ongoing, distributed, asynchronous development of an open-source product
- Uses an open-source licensing model
- Key components:
  - A leadership team for governance and management
  - A decentralized and open network of intellectual content developers
  - Users whose needs serve to guide the evolution of the product

- A key aspect of successful OSEs is their value in demonstrating the potential of a technology at scale in diverse application scenarios.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DISTRIBUTED
DEFECT MANAGEMENT
DEVELOPMENT & INTEGRATION
SECURITY

# POSE Guidelines

- Phase I ($300,000 up to one year):
  - **Scope and plan for an OSE** (ecosystem discovery, organization and governance, community building)
  - Up to 7 pages project description

- Phase II ($1,500,000 up to two years):
  - **Establish and expand a sustainable OSE** (Ecosystem Establishment/Growth, Organization and Governance, Continuous Development Model, Community Building, Sustainability)
  - Up to 15 pages project description

- The primary distinction between Phase I and Phase II:
  - Phase I's scoping and planning projects are intended for organizations that are less experienced or knowledgeable about their user base
  - Phase II focuses on the development of non-technical roles within an open source project; e.g. corporate governance, legal and administrative functions, licensing, etc
    - Phase II must have a **plan for sustainability** of the project after two years of POSE funding.
- Estimated Number of Awards: 30-50, with anticipated funding amount $27,800,000

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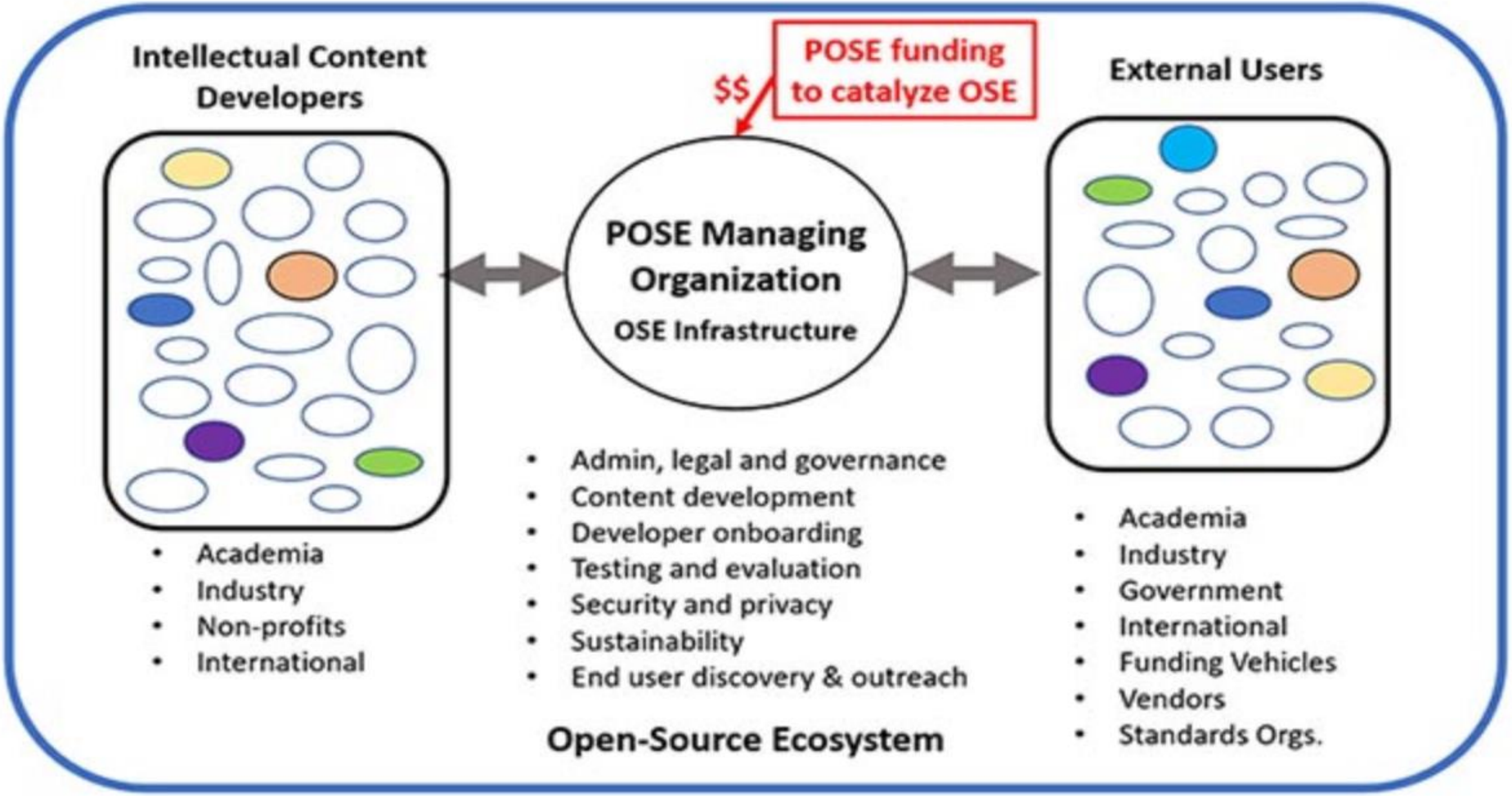
# Role of the POSE Managing Organization

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# Proposal

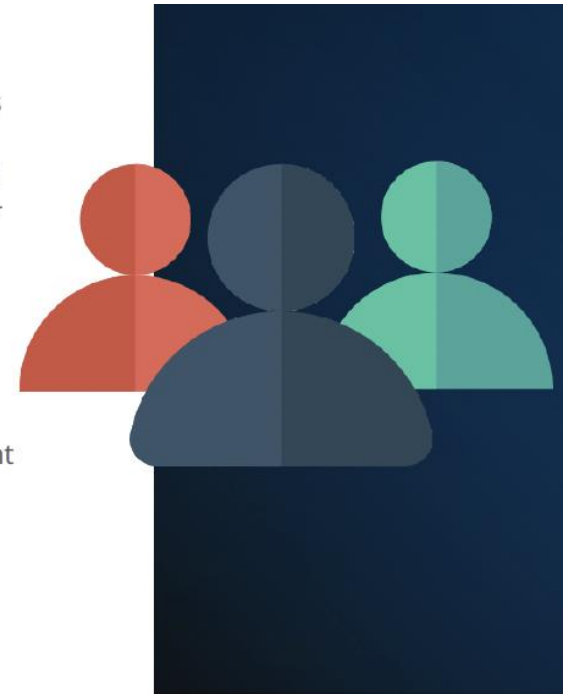
- New required sections
  - Context of OSE, includes guiding principles and long-term vision; specific societal or national needs and the anticipated broader impacts
  - A pointer to the existing publicly-available open-source product
    - Both Phase I/II should have an existing Git-style repo
  - Details on the current status of the open-source product
  - A description of the problem being addressed
  - A strong justification on team's qualifications
  - A security plan that includes a discussion of how user data is handled (data privacy) and how code quality is ensured
    - Data management plan should also address security
    - Focus on the security of the "software supply chain" using tools like automated testing, CI/CD, bots, Software Bill of Materials (SBOM)

# POSE Community Discovery Component

POSE now requires a I-Corps style interview process to identify your OSE's userbase

- 4 week required program in July/August
- 60 interviews required over the 4 weeks with a final report out
- Seems to be required for both Phase I and Phase II
- ***Consider who will be your community manager and industry mentor for any proposal!***

- 3-person team
  - **Team Lead** – Conducts most customer discovery interviews and gives progress reports at each meeting. We suggest that this might be a person who is regularly involved in communications with your users or stakeholders. Consider a graduate student/post-doc for this leadership role.
  - **Community Manager** – Jointly responsible for interviews and data collection/submission and should have an extensive understanding of the solution's potential user base. Should be the PI or co-PI.
  - **Industry Mentor** – Firsthand OSE experience to help guide efforts; should be independent of the technical development
- All team members must attend all sessions, engage in interviews
- Cameras on, prepared to fully engage
- 15+ interviews per week – 60+ total
- Weekly report-outs to present key learnings



*Some of the Instructions from NSF POSE July 2024 Training Session*

Note that NSF has also shared a DCL (NSF 24-110) to provide funding for this effort as of July 2024. https://www.nsf.gov/pubs/2024/nsf24110/nsf24110.jsp

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# OSPO And GT Resources

The Open Source Program Office is not a large unit, but we can support the following:

- Letters of collaboration and proposal description paragraph defining the OSPO's role
  - Letters for this program do not have to follow the "generic" NSF format but should indicate the role of the collaborator as **third-party users or contributors to the open-source product**
  - It's highly suggested to have **5 letters**, especially for Phase II proposals
- Pointers to useful tools and resources to improve your open source project
- Advice on licensing, best practices, and areas of focus to improve your OSE
- ***In some cases***, we may also be able to help with identifying industry mentors for community engagement

***Sample Text for NSF Proposal (can be tweaked)***

*The Georgia Tech Open Source Program Office (OSPO) provides a central resource for training, best practices, and advice on how to grow and support open source projects and ecosystems. In the context of this proposal, the GT OSPO will work with the PI to provide advice on how to best evolve their project towards a sustainable open source ecosystem through training seminars, advice on licensing and open source best practices, and tools and templates meant to help improve the quality of new and existing open source repositories.*

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# Useful Software Resources You May Consider

RepoAuditor tool from Scientific Software Engineering Center

https://github.com/gt-sse-center/repoAuditor

RepoLinter from TodoGroup

https://github.com/todogroup/repolinter

Repo Security Audit Scorecards

https://securityscorecards.dev/

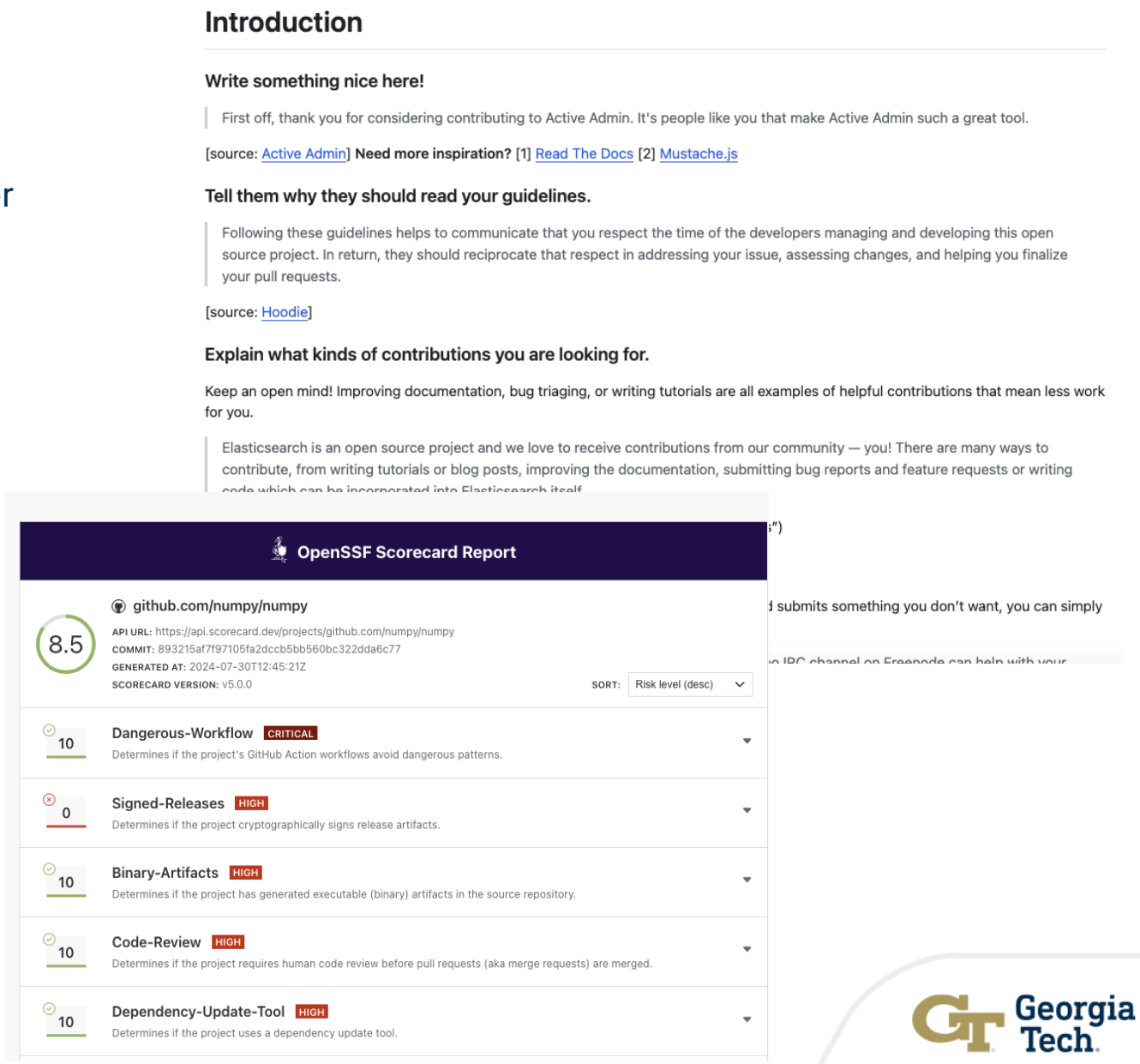
Templates for creating Contributing Guide

https://github.com/nayafia/contributing-template

Governance model explainers

https://github.com/gt-ospo/oss-training/blob/main/notebook-lessons/oss-module-06-governance.md

- Points to additional resources for selecting a governance model



# Useful Training Resources

## Books

Open Source Projects – Beyond Code

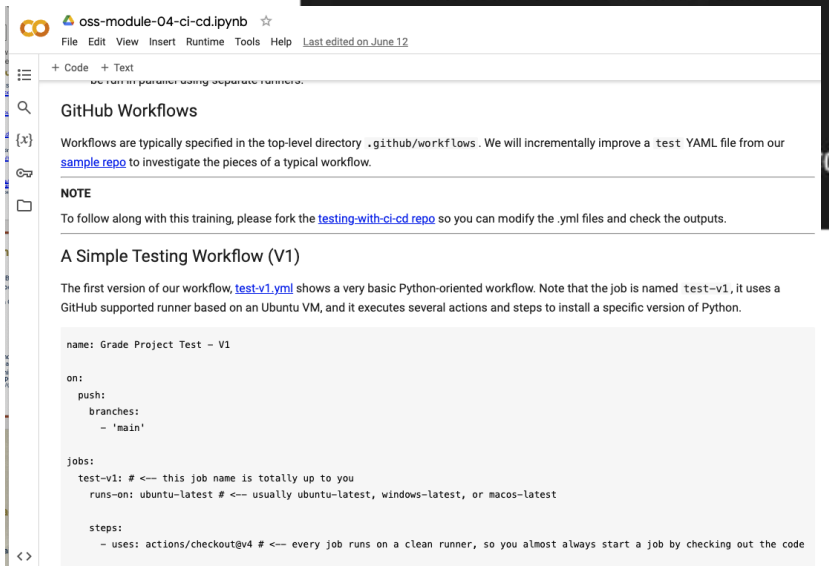
- Covers governance models and the full open source lifecycle
- Available for free from GT Library via O'Reilley

Working in Public

- Recent book focusing on GitHub and open source developer interviews


## OSS Training

- GT OSPO training is under development
  - We would appreciate any feedback from you!
- Currently covers git, unit testing, CI/CD, code review, governance models, open source project best practices
  - https://github.com/gt-ospo/oss-training
- Most are runnable notebooks via Google Colab

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# Reach out to us with questions!

Email: ospo-directors@groups.gatech.edu

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