# Effective Quality Assurance (QA) on Small Projects

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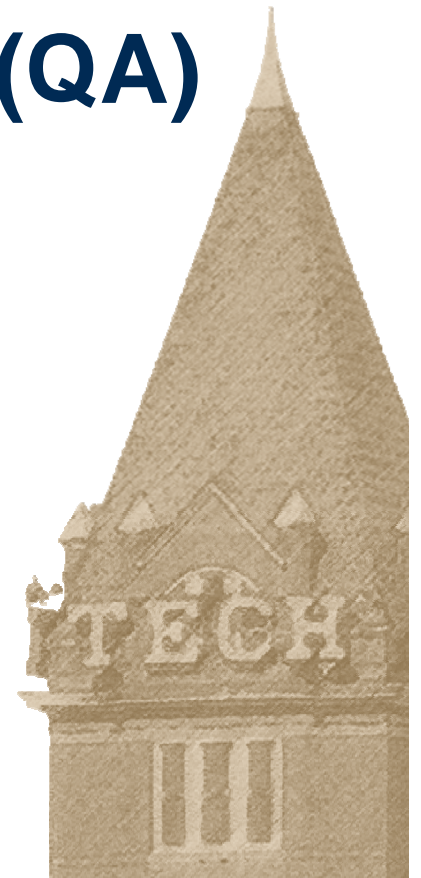
Georgia Tech Research Institute (GTRI) Overview

- **Unit of the Georgia Institute of Technology**

- **1200+ employees**

- **70% of research employees hold advanced degrees**

- **Wide variety of products**

- **Customers include federal and state government; and industry**

- **Competitively bid projects range greatly in size and duration**

- **More Info: http://www.gtri.gatech.edu/**
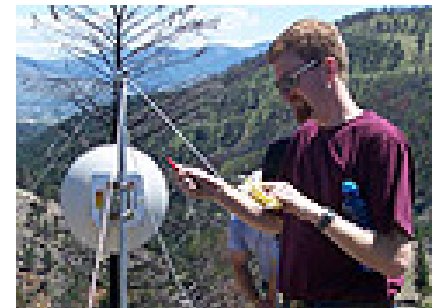
The Function of QA

- **Objectively evaluates performed processes against the applicable process descriptions, plans, and procedures**

- **Objectively evaluates work products against the applicable standards and procedures**

- **Identifies and documents noncompliance issues**

The Function of QA (cont)

- **Provides feedback to project staff and managers on the results of quality assurance activities**

- **Ensures that noncompliance issues are addressed**

- **Feeds project-developed improvements back to Engineering Process Group**

Small Project Assumptions

- A small project has 25 people or less

- Project team generally works together on all phases of product development

- Must trade-off limited resources

- Testers are often the developers

- Need independent inspection at critical phases

- Quality engineers must have technical expertise to add value on a small project

Very Small Projects (5 or less)

- **May not have adequate funding to support even minimal QA activities**

- **Probably need more outside guidance and independent reviews (QA)**

Outline

- **Develop a generic QA plan**

- **Hire and/or recruit Quality Engineers highly qualified in the product development field**

- **Mentor project team**

- **Analyze project and product risks**

- **Build a strong base for quality**

- **Add value by reducing risk**
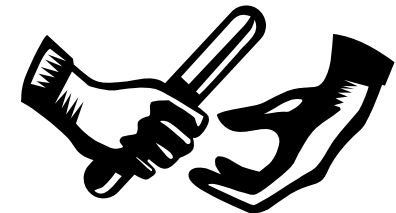
Develop a Generic QA Plan

- **Developing a QA plan from scratch for each project is too expensive**

- **Many QA activities are similar between projects**

- **Tailoring a generic QA plan and schedule is cost-effective, and is based on:**

  - **Risk**

  - **Project team experience**

  - **Customer requirements**

  - **Project schedule**

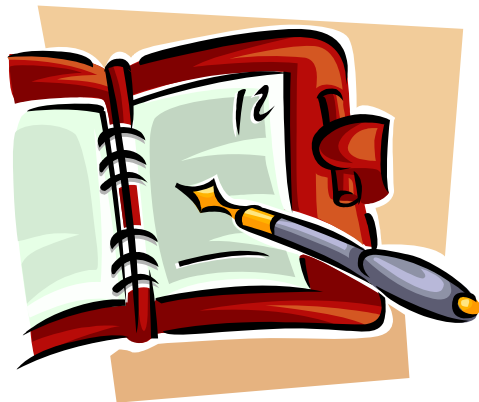 - **Project deliverables/milestones**
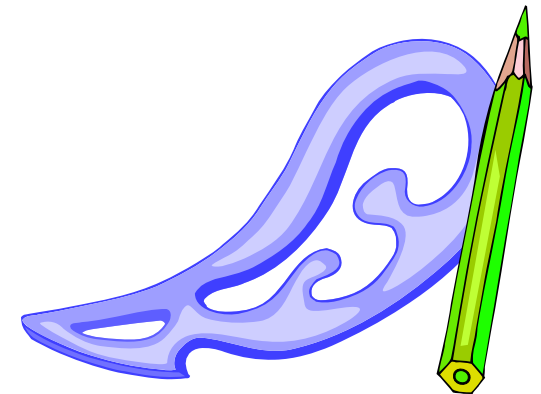
QA Plan Guideline

- **QA Tasks**
  - **Start-Up Tasks**
  - **Periodic Reviews of QA Activities with all levels of organization**
  - **Mentor Project Team**
  - **Support Customer QA**
  - **Resolve Disputes**

QA Plan Guideline (continued)

- **Standards, Practices, and Conventions**

- **Reviews and Audits**
  - **List of required reviews (each phase)**
  - **List of required audits (each phase, deliverables)**
  - **Peer review guidelines**

- **QA Schedule Template**

Hire/Recruit Qualified – Quality Engineers

- **Technical and managerial experience**

- **Knowledgeable in appropriate technical areas**

- **Should be capable of doing "real work"**

- **Recognized by project team for their experience and competency**

- **Able to abstract and share information across projects**

Mentor Project Team

- **Technical areas**

- **Management areas**

- **New processes**

- **Existing tools and processes**

- **Attitude**

Analyze Project and Product Risks

- **Specific team members**
  - **Compliant vs. noncompliant**
  - **Experienced vs. inexperienced**
- **Phases of development**
- **Cost of re-work or failure**
- **Familiarity with the subject area**
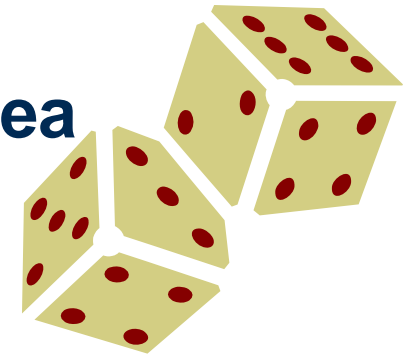
Build a Strong Base for Quality

- Leverage "star players"

  - spread across project teams

  - use to develop processes

- Praise "star players" and reward them to the extent that you are capable

- Modify processes to the organization's best-in-class

- Create an environment where process compliance is institutionalized
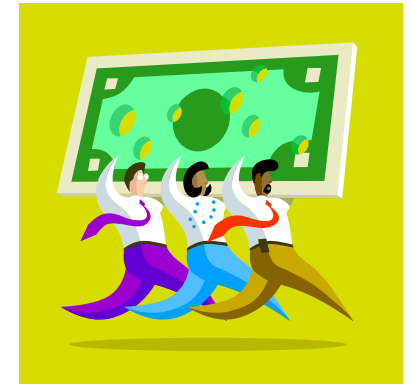
Add Value by Reducing Risk

- **Prioritize organizational QA activities based on project/product risk**

- **Communicate status to all levels of the organization, as appropriate**

- **Share lessons learned for all projects**

- **Assist the project team in developing and implementing risk mitigation strategies**

- **Act as "the conscience" of the project team**

Questions?
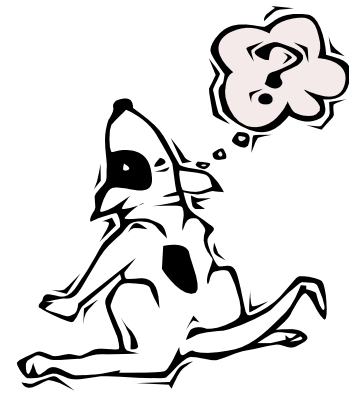
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- **More Info about GTRI:**
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