

```
@startuml
```

```
title AI-Enhanced Bug Tracking System - Sequence Diagram
```

```
actor Admin
```

```
actor Tester
```

```
actor Developer
```

```
actor "Project Manager" as PM
```

```
participant "AI Bug Tracking System" as System
```

```
participant "AI Engine" as AI
```

```
== Admin Operations ==
```

```
Admin -> System: Login
```

```
System --> Admin: Dashboard displayed
```

```
Admin -> System: Create Project
```

```
System --> Admin: Project Created
```

```
Admin -> System: Retrain ML Model
```

```
System -> AI: Send Training Data
```

```
AI --> System: Model Retrained Confirmation
```

```
System --> Admin: ML Model Updated
```

```
== Tester Workflow ==
```

```
Tester -> System: Login
```

```
System --> Tester: Dashboard displayed
```

```
Tester -> System: Report Bug
```

```
System -> AI: Run Auto-Triage on Bug
```

```
AI --> System: Predicted Priority + Suggested Developer
```

```
System -> PM: Notify for Review
```

```
System --> Tester: Bug Logged Successfully
```

**== PM Workflow ==**

PM -> System: Login

System --> PM: Dashboard displayed

PM -> System: Review AI Suggestion

PM -> System: Assign Bug to Developer

System --> PM: Bug Assignment Confirmed

PM -> System: Generate Reports

System --> PM: Report Generated

**== Developer Workflow ==**

Developer -> System: Login

System --> Developer: Task List Displayed

Developer -> System: Update Bug Status

System --> Developer: Status Updated

Developer -> System: View ML Insights

System --> Developer: Display Analytics

@enduml



