

Curriculum and Instruction Doctoral Tracker DR3

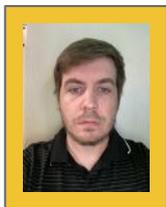
Team What's Up Doc



Introduction

Meet the Team:

- Adam Larson
 - Team Lead, connections and back end developer
- Brandon Shaffer
 - Repo manager, chief editor, front end developer
- Eddie Lipan
 - Front end developer
- Special thanks to mentor Daniel and CS Faculty Member Dr. Michael Leverington



Meet the Client:

- Dr. Gretchen McAllister, Ph.D., Coordinator of the NAU Curriculum and Instruction (C&I) doctoral program
 - Aided by Michele Benedict, Administrative Services Assistant

Problem Statement

As of Fall 2020, **3.1 million graduate students** attended universities across the United States. [1]

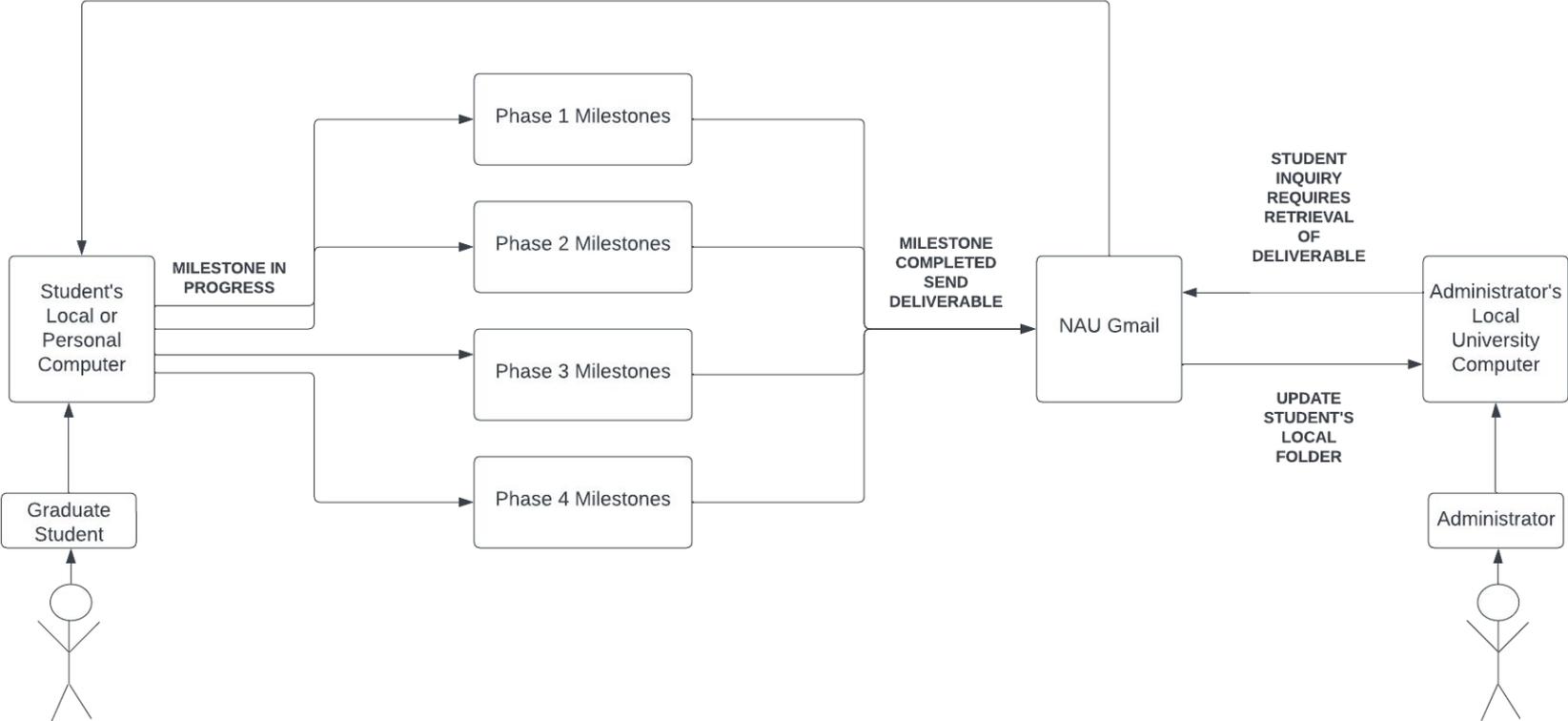
- **Learning Management Systems (LMS)** such as **Blackboard Learn** or **Canvas** are generally used to manage undergraduate classwork and grades.
- As graduate work becomes less quantifiable, managing and tracking the program through a standard LMS becomes less feasible.
- The NAU C&I doctoral program's current workflow is inefficient. Workflow outlined on next slide.

Blackboard
learn⁺

LAST ACTIVITY	GRADE
Jan 21, 2022 2:48 PM GRADED	765862
Feb 2, 2022 9:30 PM GRADED	13.00 /16
Feb 9, 2022 11:27 AM GRADED	12.00 /19
Feb 11, 2022 11:48 AM GRADED	20.00 /23
Jan 19, 2022 4:29 PM GRADED	20.00 /20
Feb 11, 2022 3:22 PM GRADED	117.00 /125

[1] [National Center for Education Statistics - Postbaccalaureate Enrollment](#)

ADMIN REPLIES TO STUDENT INQUIRY



Solution Overview

- Organization
 - Student
 - Categories
- Searchable
 - Administration tool
- Student Access
 - Progress Tracker
- Redundancy
 - Backups



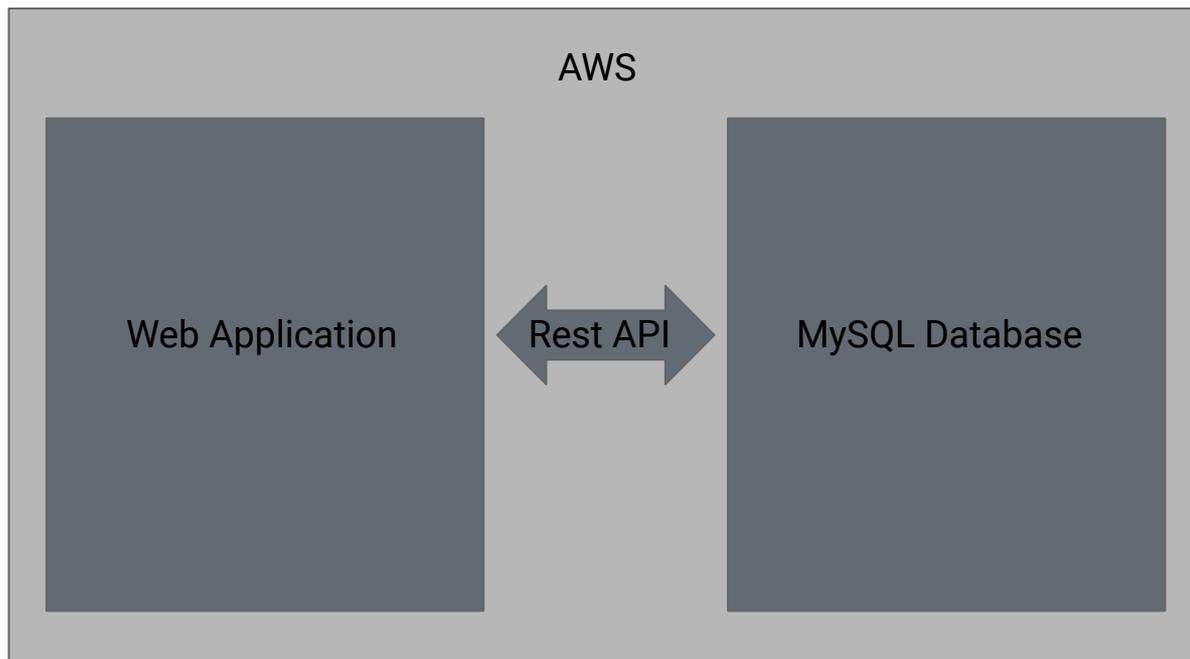
Requirements/Specifications Review

- Database for student files
- Two levels of access
 - Student
 - Faculty
- Web application
 - Database upload/download
 - Statistical Data
- NAU Colors
- Accessibility



Architecture Review

- Front-End
 - HTML Pages
 - CSS styling
 - JavaScript functionality
- Back-End
 - MySQL database
 - Rest API interaction
 - AWS server host



Implementation Details

Web App

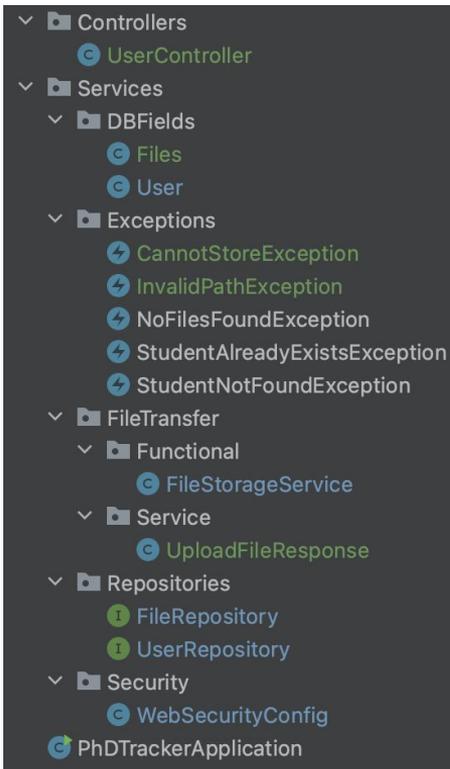
- HTML/CSS/JS
- Updates Dynamically
- Menu on left changes as files are uploaded
- Doctoral phases on top change as menu completes
- Large area is a preview placeholder

Phase 1: Coursework	Phase 2: Qualitative Research Project/ Comprehensive Exams	Phase 3: Proposal and Prospectus	Phase 4: Research and Dissertation
Qualifying Research Completion form: Completed 2/6/2020!	Qualifying Research Completion Form		
Comprehensive Exam Scheduling Form:			
Comprehensive Exam Results Form:			
Recommendation of Dissertation Committee Form (completed with chair):			
Graduate college letter confirming dissertation committee:			
Student Self-Evaluation 2 :			

Implementation Details

Rest API

- Spring Boot Java Framework
- Creates endpoints for web requests to send and receive data
- Data connectivity
 - Spring JPA (Java Persistence API) module
 - Automated SQL requests through a CRUD (create, read, update, delete) or JPA repository interface
- Security
 - Spring Security Module
 - Industry standard OAuth2 connections
 - Easily configured policy for endpoint data retrieval
 - SSL Certificate used for encryption from client to server and server to database



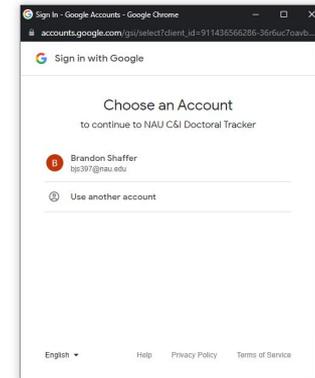
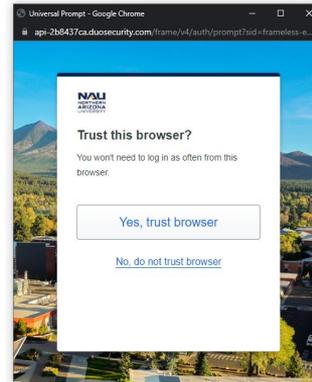
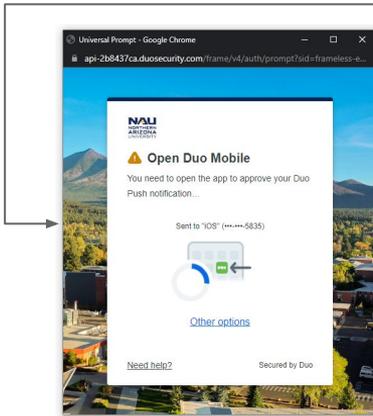
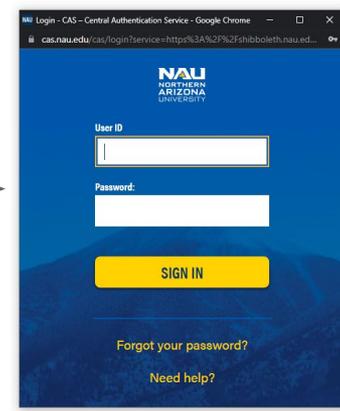
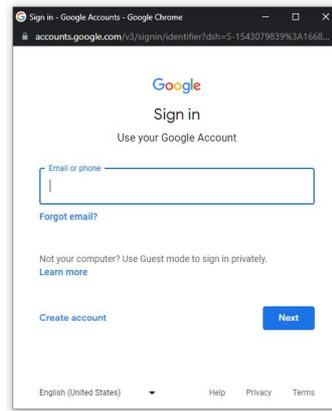
Implementation Details

Database

- MySQL
- Two tables
 - User table holds general student/admin information and status
 - File table stores file data and user connections

```
mysql> describe capstone.user;
+-----+-----+-----+-----+-----+-----+
| Field      | Type          | Null | Key | Default | Extra      |
+-----+-----+-----+-----+-----+-----+
| userNo     | int           | NO   | PRI | NULL    | auto_increment |
| userID     | varchar(255)  | NO   |     | NULL    |              |
| first_name | varchar(255)  | NO   |     | NULL    |              |
| last_name  | varchar(255)  | NO   |     | NULL    |              |
| admin      | tinyint(1)    | YES  |     | 0       |              |
+-----+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)

mysql> describe capstone.files;
+-----+-----+-----+-----+-----+-----+
| Field      | Type          | Null | Key | Default | Extra      |
+-----+-----+-----+-----+-----+-----+
| uploadID   | varchar(36)   | NO   | PRI | NULL    |              |
| filename   | varchar(256)  | YES  |     | NULL    |              |
| filetype   | varchar(256)  | YES  |     | NULL    |              |
| data       | longblob      | YES  |     | NULL    |              |
| upload_time | varchar(100)  | YES  |     | NULL    |              |
| userID     | varchar(50)   | YES  | MUL | NULL    |              |
| uploaded_as | varchar(100)  | YES  |     | NULL    |              |
+-----+-----+-----+-----+-----+-----+
7 rows in set (0.00 sec)
```



Prototype Review - Landing Page

Initial Program of Study:

Completed 1/6/2020!

Residency Plan Form:

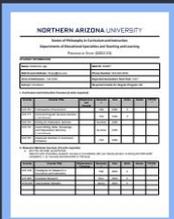
Student Self-Evaluation 1:

Initial Program of Study

Choose File No file chosen

Download

☰ POS dottie doc app.do... 1 / 3 | - 55% + | 📄 ↻ | ⬇️ 🖨️ ⋮



1

NORTHERN ARIZONA UNIVERSITY

Doctor of Philosophy in Curriculum and Instruction
Departments of Educational Specialties and Teaching and Learning
PROGRAM OF STUDY (2022-23)

STUDENT INFORMATION

Name: Dottie Doc app	NAU ID: 234567
NAU E-mail Address: ddapp@nau.edu	Phone Number: 928-999-9999
Term of Admission: Fall 2022	Expected Graduation Term/Year: 2027
Advisor: McAllister	Required Credits for Degree Program: 60

I. Curriculum and Instruction Courses (9 units required):

Course	Course Title	Replacement Course	Semester	Year	Units	Grade	T/P/IA* +
ECI 701	Frameworks of Curriculum		Fall	2022	3		
ECI 711	Doctoral Program Success Seminar (1 unit minimum)		Fall	2022	3		
ECI 721	Writing for Publication Seminar		Summer	2025			
ECI 731	Grant-Writing Skills, Knowledge, and Dispositions Seminary		Summer	2025			



Add/Remove Students | Phase Review | Student Progress Viewer

Sign-Out

New User | Edit User | Delete User | Copy | CSV | Excel | PDF

Show 10 entries Search:

userID	Last Name	First Name	Advisor (Last Name)	Term Activation	Enrollment Status	Admin Status
al762	Larson	Adam	Donaldson	fall2016	fullTime	false
amf867	Figurski	Alana	Breen	fall2018	partTime	false
bjs397	Shaffer	Brandon	Hall	spring2018	fullTime	false
eml292	Lipan	Eddie	Lindsey	fall2019	fullTime	false

Showing 1 to 4 of 4 entries Previous 1 Next

Enter New User's Information:

userID:

Last Name:

First Name:

Advisor (Last Name):

Term Activation: Spring 2014

Enrollment Status: Full

Admin Status: True

Submit

Edit Existing User's Information:

userID:

Last Name:

First Name:

Advisor (Last Name):

Term Activation: Spring 2014

Enrollment Status: Full

Admin Status: True

Submit

Prototype Review – Admin Home Page



Add/Remove Students | Phase Review | Student Progress Viewer

Copy CSV Excel PDF

Show 10 entries Search:

userID	Last Name	First Name	Term Activation	Phase 1 Milestones (0/3)	Phase 2 Milestones (0/5)	Phase 3 Milestones (0/5)	Phase 4 Milestones (0/4)
al762	Larson	Adam	fall2016	3	5	5	2
amf867	Figurski	Alana	fall2021	3	0	0	0
bjs397	Shaffer	Brandon	spring2018	3	5	3	0
eml292	Lipan	Eddie	fall2019	3	4	0	0

Showing 1 to 4 of 4 entries Previous 1 Next

Prototype Review – Admin Home Page

Enter valid Student userID:



Phase 1: Coursework

Phase 2: Qualitative Research Project/
Comprehensive Exams

Phase 3: Proposal and Prospectus

Phase 4: Research and Dissertation

Initial Program of Study:

Completed 1/6/2020!

Residency Plan Form:

Student Self-Evaluation 1:

Initial Program of Study

Choose File No file chosen

Download



POS dottie doc app.do...

1 / 3



55%



1

NORTHERN ARIZONA UNIVERSITY

Doctor of Philosophy in Curriculum and Instruction

Departments of Educational Specialties and Teaching and Learning

PROGRAM OF STUDY (2022-23)

STUDENT INFORMATION

Name: Dottie Doc app	NAU ID: 234567
NAU E-mail Address: ddapp@nau.edu	Phone Number: 928-999-9999
Term of Admission: Fall 2022	Expected Graduation Term/Year: 2027
Advisor: McAllister	Required Credits for Degree Program: 60

I. Curriculum and Instruction Courses (9 units required):

Course	Course Title	Replacement Course	Semester	Year	Units	Grade	T/P/IA*
ECI 701	Frameworks of Curriculum		Fall	2022	3		
ECI 711	Doctoral Program Success Seminar (1 unit minimum)		Fall	2022	3		
ECI 721	Writing for Publication Seminar		Summer	2025			
ECI 731	Grant-Writing Skills, Knowledge, and Dispositions Seminary		Summer	2025			

Prototype Review – Admin Home Page

Challenges and Resolutions

Primary

- ITS Assistance
 - Resolution: None yet
 - Waiting for direction and sourcing options outside of school
- Technology
 - Resolution: Lots of research
 - Numerous tutorials, videos, and trial and error
 - Some commercial assistance

Secondary Challenges

- Maintaining requirements
 - Resolution: Limits on what we can do in remaining time
 - Many changing requests and additional desired functions or student feedback
- Client scheduling
 - Resolution: Accommodate as much as possible
 - Two effective clients working together makes scheduling more challenging
 - Meet when possible, even if one person isn't available

Testing Plan

Website

- Manual
- Testing website as features are implemented and connected
- Cons - Slow and can be inconsistent

Server

- Java Based
- Uses the Spring framework and JUnit5
- Tests are automated and available for all functionality - end-points, DB connection, auto-mailer, etc.

Database

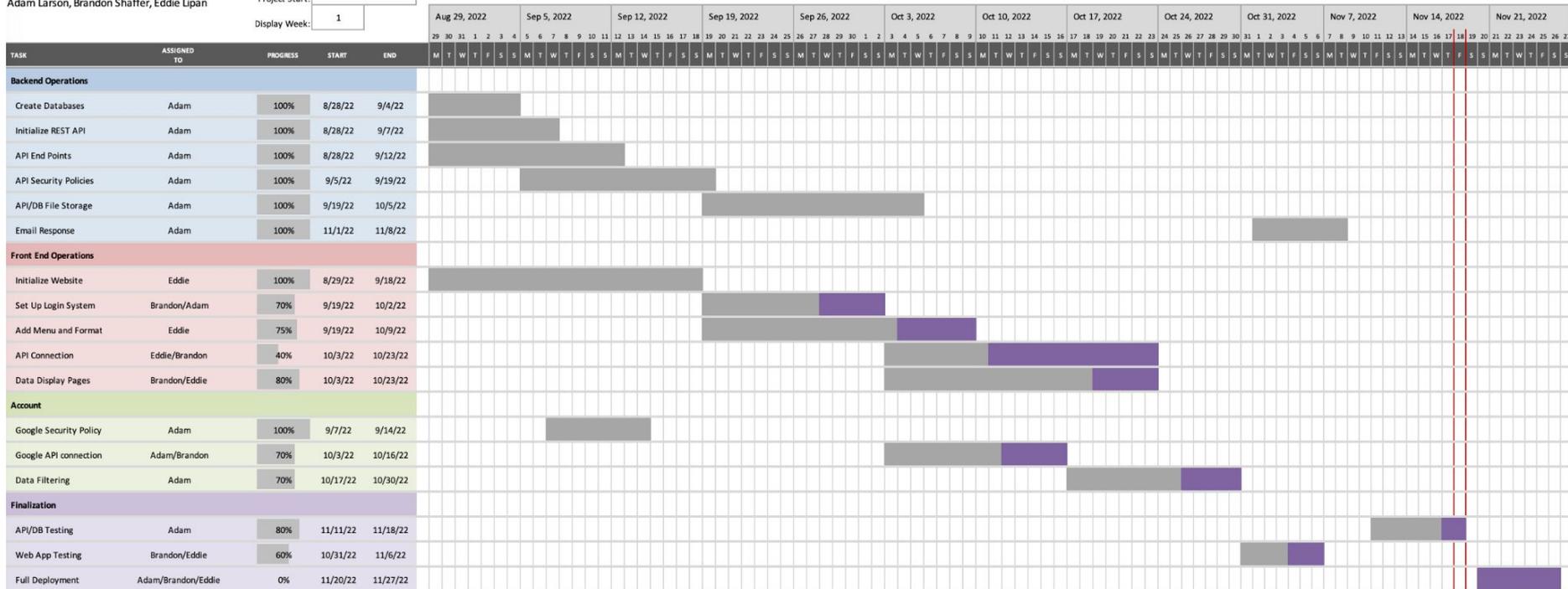
- Test method is manual - returned data is confirmed through Java tests
- MySQL tests seem to be manual or set up by personal script
 - Creates additional overhead for testing our very light database use

Schedule

Team Members:
Adam Larson, Brandon Shaffer, Eddie Lipan

Project Start: Sun, 8/28/2022

Display Week: 1



Conclusion

Team What's Up Doc is delivering an intuitive tracker, as a website application, to the NAU C&I doctoral program that will:

- Adhere to proper COE authentication and authorization
- Relieve administrators from data entry and acquisition duties
- Allow graduate students to track their progress through the graduate program

