Indiana Commission for Higher Education

Program Description—Master of Arts in Teachers in Chemistry

To Be Offered by Indiana University as a Collaborative Program at Several Campuses

1. Characteristics of the Program

a. Campus(es) Offering Program—Joint Degree Shared by

Indiana University Bloomington
Indiana University East
Indiana University Kokomo Indiana
University Northwest Indiana
University South Bend Indiana
University Southeast

b. Scope of Delivery—Statewide
c. Mode of Delivery—100% Online
d. Other Delivery Aspects—None
e. Academic Unit Offering Program—varies by campus:

IU Bloomington—College of Arts and Sciences
IU East—School of Natural Science and Mathematics IU
Kokomo—School of Sciences
IU Northwest—College of Arts and Sciences
IU South Bend—College of Liberal Arts and Sciences IU
Southeast—School of Natural Sciences

2. Rationale for the Program

a. Institutional Rationale (Alignment with Institutional Mission and Strengths)

- Why is the institution proposing this program?

a. Program Goals:

The Master of Arts for Teachers in Chemistry has two primary goals:

1. The Master of Arts for Teachers in Chemistry will provide graduate-level instruction in chemistry to students interested in obtaining advanced skills and knowledge in this area. These may include instructors of chemistry teaching in community colleges and high school dual-credit instructors, as well as working professionals. For those students who are teaching or plan to teach chemistry, certificate courses will help them integrate new concepts and approaches into their teaching, thereby improving the quality of instruction and learning outcomes for their students.

2. The certificate allows instructors of introductory college-level chemistry courses to

partially meet the faculty educational standards of many post-secondary institutions. These requirements usually include a master's degree in the discipline, or a master's degree in another field (e.g., education) plus 18 hours in the discipline. With the increased attention that the Higher Learning Commission (HLC) and other accrediting bodies are giving to the issue of faculty qualifications, current faculty are seeking ways to meet the requirement.

These two goals are mutually reinforcing. In 2015, the HLC issued guidelines on "instructor qualification" in the effort to ensure that dual-credit courses continues to meet college-level expectations and outcomes even as the number of students completing these classes greatly increases. HLC guidelines mandate that individuals teaching bachelors-level classes for college- credit should hold at least a Master's degree in the discipline in which they teach; however, the guidelines allow for instructors who hold M.S.Ed., and other Master's degrees to gain the requisite disciplinary training by completing 18 graduate credits in discipline-specific courses.

Master of Arts for Teachers coursework will help those students who are teaching or plan to teach college-level introductory chemistry courses to integrate new concepts and approaches into their teaching, thereby improving the quality of instruction and learning outcomes for their students. The degree will be of particular interest to dual-credit and international baccalaureate instructors teaching college-level chemistry courses in high schools as well as community college chemistry instructors.

The Master of Arts for Teachers in Chemistry will "stack" with the recently approved Graduate Certificate in Chemistry to meet the needs of the full spectrum of current and new dual-credit instructors attempting to meet the HLC standards. The certificate provides a degree plan and structure to admit and track students who simply need the discipline –specific graduate coursework in chemistry.

- Students who hold a Master's degree and already have graduate chemistry coursework on transcript need not complete the certificate to meet HLC standards.
- Students who hold and M.S.Ed. or related Master's degree can complete the certificate to document that they have completed the requisite 18 credit hours of graduate coursework.
- Students who need both the graduate coursework and a Master's degree can enroll in the certificate and transition into the Master of Arts for Teachers in Chemistry after completing 6 credit hours of certificate work with acceptable grades.
- To earn the Master of Arts for Teachers in Chemistry, students will complete the 18 credit hours required for the Graduate Certificate in Chemistry and 12 additional credit hours of graduate coursework offered by the Schools of Education.

This structure allows students to earn the graduate credits they need while streamlining the admissions and credentialing processes by taking full-advantage of the online mode of instruction and the coordinated investment of instructional resources and support services made possible by IU's collaborative model for online education.

The Master of Arts for Teachers curriculum combines the six courses required for the Graduate Certificate in Chemistry with four additional graduate courses offered by IU's Schools of Education. The four-course Education Component will be a common feature shared among five distinct Master of Arts for Teachers programs in the following fields: Biology, Chemistry, History, Mathematics and Political Science.

- How is it consistent with the mission of the institution?

This certificate answers the charge of the Indiana University Bicentennial Strategic Plan to provide an excellent education that promotes retention and completion through innovative online instruction that accommodates the busy schedules and family demands of working Hoosiers.

With a focus on extending the reach of dual-credit and community college instruction in high- demand introductory level courses, this Graduate Certificate meets IU's charge as a public university, which the *Bicentennial Strategic Plan* as follows:

> IU is a public university in a deep sense; it exists to benefit all the people of the state, and the world beyond, and has a charge to continue its long tradition of engagement in the economic, social, environmental, and cultural life of all Hoosiers. This charge applies to all IU campuses, and it has special significance for the regional campuses. These campuses' communities and regions rely on their respective campuses for undergraduate and professional education that addresses regional needs.

The Master in Arts for Teachers in Chemistry is proposed as a joint degree program to be delivered by six IU campuses—Bloomington, East, Kokomo, Northwest, South Bend and Southeast. By design, this joint program provides efficiencies of scale while maintaining the unique characteristics of the participating campuses.

- How does this program fit into the institution's strategic and/or academic plan?
- How does this program build upon the strengths of the institution?

The Indiana University Bicentennial Strategic Plan identified the integration of new educational technologies and collaborative platforms and the development of a robust program of online education as essential tools to ensure that the university and its faculty continue to serve the citizens of the state of Indiana.

As a part of this initiative, the university developed IU Online to serve as administrative home "coordinates and catalyzes IU's efforts in this area." The plan summarizes the specific benefits as follows:

Online and hybrid delivery allow IU through IU Online to expand its offerings across campuses in a cost-effective way, through developing systems of shared online resources. IU will complete through IU Online a university-wide framework for online education, to enhance instructional quality and support, and create scalable economies in course and program delivery for all campuses.

See Appendix 1 for web addresses to:

- Indiana University Bicentennial Strategic Plan
- January 2016 IU Online: A Collaborative Model for Online Education at Indiana University.

b. State Rationale

i. How does this program address state priorities as reflected in the ICHE's 2016 strategic plan Reaching Higher, Delivering Value.

The proposed collaborative Master of Arts for Teachers in Chemistry will address each one of the four goals cited in *Reaching Higher, Delivering* Value.

I. Completion—Faculty designed the curriculum of the collaborative Master of Arts for Teachers in Chemistry to help improve instruction in college-level chemistry courses taught in Indiana high schools and community colleges as a part of the dual-credit program, which will in turn promote progress to degree and on time graduation at two- and four-year institutions.
II. Competency—The collaborative Master of Arts for Teachers in Chemistry will serve instructors teaching introductory college-level chemistry courses. In turn, their students will be better prepared to succeed in a wide-variety of degree programs and careers that build on a strong foundation in the concepts and methods of the chemical sciences.
III. Career— The collaborative Master of Arts for Teachers in Chemistry will allow instructors to meet the HLC qualification standards so that they can continue to teach dual-credit courses in their schools.
IV. Delivering Value—Dual-credit courses provide high school and community college students with affordable, transferable credits that they can apply towards completion of both two- and four-year college degrees. Due to the certificate's 100% online mode of delivery, dual-credit instructors will able to further their education with minimal disruption to their professional and family lives. In addition, IU's Advanced College Project has secured a number of grants and other sources of funding that will subsidize tuition costs for affiliated dual-credit instructors through the first few years of this initiative.

c. Evidence of Labor Market Need

i. National, State, or Regional Need

- Is the program serving a national, state, or regional labor market need?

The collaborative online Master of Arts for Teachers in Chemistry will provide the discipline-specific graduate coursework that dual-credit and community college instructors need to meet the disciplinary expertise component of the HLC's instructor qualification standards. State legislatures across the nation place increased emphasis on the role of dual-credit coursework as a means to reduce time to degree, and taken together with recent changes in HLC accrediting practices, demand for these online programs is likely to be steady in the foreseeable future.

The collaborative online Master of Arts for Teachers in Chemistry will provide the discipline-specific graduate coursework that dual-credit and community college instructors need to meet the instructor qualification standards set by the HLC instructor qualification standards. With state legislatures' increased emphasis on the role of dual-credit coursework as a means to reduce time to

degree, as well as recent changes in HLC accrediting practices will likely create steady demand for these online programs.

Chemistry is one of the most highly enrolled dual-credit courses in Indiana. There are many dual-credit teachers across the state and throughout the country who can complete this certificate to meet HLC standards and deepen their understanding of chemistry.

- 2700 Indiana students complete dual-credit Chemistry I/II each academic year. (Not all of these students are taking these classes in IU affiliated programs, but all the dual-credit instructors will be expected to meet HLC standards.
- 160 ACP affiliated Biology teachers need the graduate coursework required by HLC
- 70 dual-credit instructors have already begun taking Graduate Chemistry online courses offered in the Summer and Fall of 2018 and in the Spring of 2019.
- Among these students 20 ACP affiliated students plan to pursue the MAT as well.
- Another 27 dual-credit instructors not affiliated with IU are taking classes and a significant portion of these students may need the MAT as well.

ii. Preparation for Graduate Programs or Other Benefits

- Does the program prepare students for graduate programs or provide other benefits to students besides preparation for entry into the labor market?

  This certificate will serve secondary and community college instructors. It is unlikely that many of these students will opt to apply for a Ph.D. program in Chemistry, but assignments completed for the certificate could be used to prepare an application dossier. Admission to the Graduate Certificate Program will not result in admission to IU Bloomington's doctoral programs.

iii. Summary of Indiana DWD and/or U.S. Department of Labor Data

- Summarize the evidence of labor market demand for graduates of the program as gleaned from employment projections made by the Indiana Department of Workforce Development and/or the U.S. Department of Labor?

At the national level, the growth in demand (looking ahead to 2026) for instructional coordinators is 11% nationally and 12% in Indiana. At the national level, in 2017 elementary, middle school, and secondary teachers mean salaries ranged from $60,950 to $62,760 per year, and Instructional Coordinators had a mean salary of $66,680. In Indiana, average 2017 salaries for elementary, middle school, and secondary teachers

were $50, 306, $51,407, and $52,673, respectively. Instructional coordinators in Indiana made an average salary of $60,705. This analysis suggests that program graduates should see a significant gain of income as a result of completing this degree.

See: Indiana Department of Workforce Development, www.in.gov/dwd/ra. Visited 8/30/2018.

See Appendix 2 for source data and a summary of Indiana DWD and/or U.S. Department of Labor Data

iv. National, State, or Regional Studies

- Summarize any national, state, or regional studies that address the labor market need for the program.

  In an emergency presentation to the Indiana Commission for Higher Education on October 8, 2015, two representatives from the Center for Excellence in Leading and Learning, Dr. Janet Boyle, Executive Director and Tyonka M. Perkins, Interim Director of Early College presented findings about the potential impact of these HLC changes based on a credential analysis of Indiana, dual-credit instructors. Boyle and Perkins found that:

  - Only 30% of current instructors hold an M.A. in their field;
  - 1,193 instructors hold M.A.T.s, and other graduate degrees in the field of education, but lack the 18 graduate credit hours in the specific content area in which they teach;
  - A further 600 instructors have neither a Master's degree nor the requisite content area credit hours;
  - In all, more than 43,000 Indiana students currently take dual-credit courses with instructors who do not meet the HLC standards

  To meet the needs of these instructors, and by extension, their students, IU's Office of Online Education (OOE) and Advanced College Project (ACP) identified the highest priority dual- credit courses in terms of statewide enrollments, and asked departments and campuses to consider developing online graduate certificates that will satisfy HLC standards for content area instruction.

  In the three years since the 2015 ICHE presentation, ACP has collected the following data pertinent to both need and demand:

  - Indiana has seen a nearly 25% increase in the overall number of high school students taking dual-credit courses;
  - During the 2017-18 academic year, approximately 100,000 Hoosiers enrolled in dual- credit courses and among these 2700 students enrolled in dual-credit Chemistry courses;
  - Approximately 160 ACP affiliated dual-credit teachers could use

enrollment in the online Master of Arts for Teachers in Chemistry to meet HLC standards.

In order to meet this demand and extend the reach and impact of this program, IU decided to invite all the IU campuses with instructional capacity in this field to develop this program as 100% online collaborative degree.

OOE will use targeted social media marketing and related recruiting tools to reach decision makers in school districts trying to promote technology infusion in the classroom and improve the skills and expertise of their teachers and administrators.

i. Surveys of Employers or Students and Analyses of Job Postings

- Summarize the results of any surveys of employers or students and analyses of job postings relevant to the program.

  IU's Advanced College Project speaks with Indiana district superintendents, high school principals, and current dual-credit instructors on a daily basis. According to their analysis, in the three years since the 2015 ICHE presentation, Indiana has seen a nearly 25% increase in the overall number of high school students taking dual-credit courses. In the 2017-18 academic year, nearly 100,000 Hoosiers enrolled in dual-credit courses.

  This Master's degree will enable teachers who have a Bachelor's degree to take a step up the career ladder if they take jobs as instructional coordinators. This could mean a pay increase of $5,000 to $9,000 per year, depending on the educational context and job responsibilities.

ii. Letters of Support

- Summarize, by source, the letters received in support of the program.

  See Appendix 3: Letters of Support from Mike Beam, Director, IU Advanced College Project

3. Cost and Support for Program

a. Costs

i. Faculty and Staff

- Of the faculty and staff required to offer this program, how many are in place now and how many will need to be added?

The faculty and staff required to deliver the Master of Arts for Teachers in Chemistry are in place. No new hires required.

ii. Facilities

- Summarize any impact offering this program will have on renovations of existing facilities, requests for new capital projects (including a reference to the institution's capital plan), or the leasing of new space.

  No additional facilities will be required to deliver the collaborative Master of Arts for Teachers.

iii. Other Capital Costs (e.g. Equipment)

- Summarize any impact offering this program will have on other capital costs, including purchase of equipment needed for the program.

  No additional capital costs will arise from delivering this Master of Arts for Teachers.

b. Support

i. Nature of Support (New, Existing, or Reallocated)

The Offices of Online Education (OOE) and Collaborative Academic Programs (OCAP) coordinate and support the delivery of IU's multi-campus online degrees. Campus-specific costs will be covered by existing resources.

ii. Special Fees above Baseline Tuition

OOE and OCAP are supported by a portion of the $70 per credit fee tied to students pursuing 100% online degree programs. These funds support course development and a variety of student support services including success coaching and tutoring.

3. Similar and Related Programs

a. List of Programs and Degrees Conferred

i. Similar Programs at Other Institutions

Other universities offer non-degree graduate coursework to individual teachers, but these online Graduate Certificates that will stack into the Master of Liberal Studies and other Master's degree programs (currently in development) are unique to IU.

- CHE staff will summarize data from the Commission's Program Review Database on headcount, FTE, and degrees conferred for similar programs in

the public sector, as well as information on programs in the non-profit and proprietary sectors, to the extent possible.

See: *CHE Appendix A: Similar Programs at Other Institutions.*

ii. Related Programs at the Proposing Institution

- CHE staff will summarize data from the Commission's Program Review Database on headcount, FTE, and degrees conferred for related programs at the proposing institution.

  See CHE Appendix B: Related Programs at the Proposing Institution,

c. List of Similar Programs Outside Indiana

- If relevant, institutions outside Indiana (in contiguous states, MHEC states, or the nation, depending upon the nature of the proposed program) offering (on-campus or distance education) programs that are similar:

  University of Texas-El Paso
  Bowling Green State
  University

d. Articulation of Associate/Baccalaureate Programs

Not Applicable.

e. Collaboration with Similar or Related Programs on Other Campuses

- Indicate any collaborative arrangements in place to support the program.

  The Office of Online Education, the Office of Collaborative Academic Programs, are partnering with the Advanced College Project to promote and administer grants from the ICHE and the Department of Education that can provide funds to support graduate study for dual-credit and STEM instructors across the state.

  The collaborative online Master of Arts for Teachers in Chemistry will be listed with the other 100% online programs posted at IU Online web portal and will receive marketing and recruitment support from the Office of Online Education (OOE). OOE staff and representatives will be trained to answer initial responses regarding the program and refer prospective students to the campuses for follow-up. OOE will partner with this academic program to provide marketing and recruitment campaigns that reinforce the overall recruitment message and maximize the utilization of OOE, campus, and program resources. OOE will provide effectiveness tracking of marketing campaigns and establish Return on Investment for marketing and recruitment of IU Online students.

To provide a suite of services to students in 100% online collaborative degrees, OOE partners with providers on several IU campuses. The office provides 24/7 tech support for students via phone, email and chat. During the 2017-18 academic year, OOE rolled out the following support for students pursuing an IU Online program:

- onboarding/orientation to online education at IU,
- coaching and mentoring services,
- math and writing tutoring,
- internship/ coop management, and
- career services.

In addition, these partnerships will also coordinate student conduct, ADA compliance, and student advocacy for students enrolled at multiple campuses. With regard to student conduct and student grievances, OOE will facilitate conversations among campuses, and, to the extent possible, seek to resolve the issue using existing campus processes

4. Quality and Other Aspects of the Program

a. Credit Hours Required/Time To Completion

Working professionals will be able to complete the 30 credit hour Master of Arts for Teachers in Chemistry in 24-30 months of consecutive part-time enrollment. Students who can take more than one course at a time may complete the certificate more quickly.

b. Program Goals

The coursework in the Master of Arts for Teachers in Chemistry will increase the student's theoretical knowledge in the discipline of Chemistry. The certificate will serve two primary audiences:

a) Dual-Credit and Community College Instructors teaching courses in Chemistry.
b) Working professionals who seek to advance their knowledge.

The Master of Arts for Teachers in Chemistry will support the reach and quality of Indiana's dual-credit courses by providing:

- A practical and economical online program of study to high-skilled and motivated teachers with advanced training in the field of Chemistry;
- A challenging and coherent curriculum that meets the HLC's dual-credit accreditation standards for graduate training in Chemistry.

c. Learning Outcomes

Upon completion of the Chemistry component of the Master of Arts for Teachers in Chemistry, students will able to demonstrate:

I. Expertise in chemistry Students will be able to:
   a. Demonstrate the ability to break down and analyze chemical concepts and processes.
   b. Demonstrate an achievement of breadth of knowledge across a selection of sub disciplines in Chemistry.
   c. Design assignments to teach relevant chemical concepts.

II. Effective oral and written scientific communication skills Students will be able to:
   a. Retrieve information from the chemical literature.
   b. Communicate understanding of literature.

III. Ability to analyze data critically and to design experiments independently Students will be able to:
   a. Develop methodological approaches and solve problems.
   b. Critically analyze a journal article.

IV. Application of the impact of chemistry on the society Students will be able to:
   a. Analyze processes in everyday life using chemical principles.
   b. Demonstrate an awareness of the impact of chemistry on the environment, society, and other cultures outside the scientific community.
   c. Evaluate chemistry-related press releases and news media for veracity and best practices in research.

Upon completion of the Education component of the M.A.T. in Chemistry, graduates will be able to—

I. Engage in the development of rigorous curriculum planning and design;
II. Promote college-level studies skills and habits of mind;
III. Use assessment data to inform college-level instructional practices;
IV. Prepare dual-credit students for success in college-level assessments;
V. Conduct research to improve dual-credit instruction.

d. Pre-requisite coursework

Bachelor's degree.

e. Degree Requirements

Students will have to complete 18cr in the discipline to earn the Master of Arts for

Teachers in Chemistry. Capstone will be a required course (CORE). Students will pick additional 15cr from remaining courses (ELECTIVES).

CORE COURSE (3 cr.)

CHEM-T 590 Chemistry Capstone

ELECTIVE COURSES (Up to 15cr)

CHEM-T 510	Inorganic Chemistry (3cr)
CHEM-T 520	Organic Synthesis (3cr)
CHEM-T 530	Organic Spectroscopy (3cr)
CHEM-T 540	Physical Chemistry (3cr)
CHEM-T 550	Introductory Biochemistry (3cr)
CHEM-T 555	Survey in Chemistry VT: Organic, Analytical, Inorganic, etc (3cr)
CHEM-T 560	Environmental Chemistry (3cr)
CHEM-T 570	Nuclear Chemistry (3cr)

6. Projected Headcount and FTE

NEW COLLABORATIVE ACADEMIC DEGREE PROGRAM PROPOSAL-**CAMPUS SUMMARY**

Institution/Location:	Indiana University-South Bend					
Program:	Master of Arts for Teachers in Chemistry					
Proposed CIP Code:	40.0501					
Base Budget Year:	2019-20	Year 1	Year 2	Year 3	Year 4	Year 5-8
		2019-20	2020-21	2021-22	2022-23	2023-26
Enrollment Projections (Headcount)						
Full-time Students		-	-	-	-	-
Part-time Students		2	4	6	8	8
		2	4	6	8	8
Enrollment Projections (FTE)*						
Full-time Students		-	-	-	-	-
Part-time Students		1	2	3	4	4
		1	2	3	4	4
*Sum of rounded detail may not equal rounded totals.						
Degree Completion Projection		-	-	2	4	8

NEW ACADEMIC COLLABORATIVE DEGREE PROGRAM PROPOSAL-**AGGREGATE SUMMARY**

Institution/Location:	Indiana University-Six campuses: BL, EA, KO, NW, SB, SE.					
Program:	Master of Arts for Teachers in Chemistry					
Proposed CIP Code:	40.0501					
Base Budget Year:	2019-20	Year 1	Year 2	Year 3	Year 4	Year 5-8
		2019-20	2020-21	2021-22	2022-23	2023-24
Enrollment Projections (Headcount)						
Full-time Students		-	-	-	-	-
Part-time Students		14	28	42	56	56
		14	28	42	56	56
Enrollment Projections (FTE)*						
Full-time Students		-	-	-	-	-
Part-time Students		7	14	21	28	28
		7	14	21	28	28
*Sum of rounded detail may not equal rounded totals.						
Degree Completion Projection		-	-	14	28	56
CHE Code:						
Campus Code:						
County Code:						
Degree Level:						
CIP Code:						

Appendix 1: Web Addresses Strategic Plan and IU Online Policies

The Indiana University Bicentennial Strategic Plan can be accessed at https://strategicplan.iu.edu/plan/education.html

The IU policy paper on online collaborative programs, "January 2016 IU Online: A Collaborative Model for Online Education at Indiana University" can be viewed at https://uaa.iu.edu/academic/ooe/docs/ooe_model.pdf.

Appendix 2: Summary of Indiana DWD and/or U.S. Department of Labor Data

Indiana DWD Employment Projections: High School Teachers

25-2031 Secondary School Teachers, Except Special and Career/Technic	Indiana	U.S.
2016 Employment	18,313	1,018,700
2026 projection	19,501	76,800
Percent Change	6.5%	8.0%
Annual Wage 2017	$52,673	$59,170

Source: Indiana Department of Workforce Development, www.in.gov/dwd/ra

This table was produced by Indiana Department of Workforce Development - Research and Analysis : 2/26/2019 10:24:50 AM

Brief Market and Demand Analysis

Degree: Master of Arts for Teachers in Chemistry CIP Code used: 40.0501 - Chemistry, General
SOC Code(s) used: 25-2031.00 - Secondary School Teachers, Except Special and Career/Technical
Education Campus: IU Office of Online Education

Delivery: Online

OUTLOOK
Source: http://www.onetonline.org/

National Outlook: Above average

Indiana Outlook: Above average
Average Salary: National: $59,170 annual; Indiana: $50,850
Projected growth (2016-2026): National: +8%; Indiana: +7%
Projected annual job openings (due to growth and net Replacement):
National: 79,500
Indiana: 510

COMPETITION

Source: IPEDS College Navigator[1]

Other Indiana institutions offering program:
0 Indiana campuses offer this degree at the "Post-baccalaureate Certificate" level (none online)

Number of institutions offering degree nationally:
Certificates: 7 (0 online)

2015-17 IPEDS Completions data
Post-baccalaureate or Post-Master's Certificate: 19 (0 from Indiana[2])

Notes:
[1] The College Navigator does not differentiate certificate LEVEL and may include undergraduate certificates.
[2] Indiana completions are reported by IU as Post-Baccalaureate Certificates.

Appendix 3-Letters of Support—IU Advanced College Project

To: Hitesh Kathuria, Assistant VP and Director of the Office of Collaborative Academic Programs
Re: MATs in Biology, Chemistry, History, Mathematics and Political Science

2019-02-21

Dear Hitesh,

Recent clarifications to faculty credentialing expectations, as outlined in the Higher Learning Commission's Assumed Practices, jeopardize Indiana's efforts to make dual credit coursework widely and equitably available. Indiana has invested deeply into strengthening and expanding access to quality dual credit opportunities for students in every high school. The majority of high school teachers currently trained to offer dual credit courses do not possess all necessary academic qualifications (hundreds of teachers lack graduate degrees or graduate courses in the discipline). Without intervention, it is clear that many schools will no longer be able to provide dual credit opportunities; the deadline for compliance with HLC expectations is September 1, 2022 for dual credit.

Most teachers do not have access locally to a college or university with significant graduate course offerings. In cases where location is not a barrier, on-campus course offerings are problematic due to the limited availability of the K-12 teacher during typical class hours. Online opportunities for both individual courses as well as degree programs are the only option for working teachers. In particular, courses in English and the Social Sciences are among the most widely offered dual credit courses.

Delivery of MATs in the fields of Biology, Chemistry, History, Mathematics and Political Science will provide access to teachers in all areas of the state, in a format conducive to participation, and in five high-impact disciplines. During the 2018-19 Academic Year, ACP has provided courses to more than 17,000 students in 225 high schools in the state, collaborating with more than 650 teachers. ACP teachers are extremely interested in enrolling in the necessary coursework and IU is developing enrollment plans with each ACP teacher who does not currently meet HLC expectations. The proposed MATs will allow ACP to retain significant numbers of teachers and provide them with a viable and meaningful pathway toward compliance.

I fully support the development of these degrees and am happy to provide additional information if desired.

With regards,

Michael Beam

Michael Beam (Feb 26, 2019)

Mike Beam
Coordinator, Precollege and Dual Credit Programs University Academic Affairs

Appendix 4-Curriculum Map

Master of Arts for Teachers—Chemistry	
I. Chemistry Component—18 credits	
1. Chemistry Electives	*Students will pick five courses from the following list (15 Cr)*
CHEM-T 510	Inorganic Chemistry (3cr)
CHEM-T 520	Organic Synthesis (3cr)
CHEM-T 530	Organic Spectroscopy (3cr)
CHEM-T 540	Physical Chemistry (3cr)
CHEM-T 550	Introductory Biochemistry (3cr)
CHEM-T 555	Survey in Chemistry-Topics include: Organic, Analytical, Inorganic, etc (3cr)
CHEM-T 560	Environmental Chemistry (3cr)
CHEM-T 570	Nuclear Chemistry (3cr)
2. Chemistry Capstone	Pick any one of the following four options (3 Cr)
CHEM-T 590	Chemistry Capstone

II. Education Component—12 credits	
1. Instruction/Curriculum (One course-3 cr)	
EDUC-J 500	Instruction in the Context of Curriculum
2. Assessment (One course-3 cr)	
EDUC-P 507	Planning and Assessment
3. Diversity/Inclusive Teaching (One course-3 cr)	
EDUC-H 520	Social Issues in Education
4. Research into Practice (One course-3 cr)	
EDUC-Y 520	Strategies for Educational Inquiry

CHE Appendix A: Similar Programs at Other Institutions.
CHE Appendix B: Related Programs at the Proposing Institution.