



ARKANSAS DEPARTMENT OF EDUCATION

CONTRACT/GRANT AWARD ROUTING FORM

Use this routing form for obtaining approvals (in the order listed below) for every Professional or Technical Services Contract, MOU, Grant Award or other agreement exceeding \$10,000. When the form is complete, the contract must be returned to the Finance Office. The Finance Office will forward those exceeding \$50,000 to DFA for additional approvals.

Contract with: UALR

Approved: [Signature] Date: 03/26/16
Unit Leader

Approved: \_\_\_\_\_ Date: \_\_\_\_\_
Assistant Commissioner

Approved: [Signature] Date: 4/7/16
Finance Office

Approved: [Signature] Date: 4/15/16
Legal Office

Approved: [Signature] Date: 4/20/16
Commissioner/Deputy Commissioner

Comments
\_\_\_\_\_
\_\_\_\_\_
\_\_\_\_\_
\_\_\_\_\_



# ARKANSAS DEPARTMENT OF EDUCATION

## CONTRACT/GRANT AWARD ROUTING FORM

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Contract with: UALR

Approved:  Date: 03/26/16  
Unit Leader

Approved: \_\_\_\_\_ Date: \_\_\_\_\_  
Assistant Commissioner

Approved: \_\_\_\_\_ Date: \_\_\_\_\_  
Finance Office

Approved: \_\_\_\_\_ Date: \_\_\_\_\_  
Legal Office

Approved: \_\_\_\_\_ Date: \_\_\_\_\_  
Commissioner/Deputy Commissioner

Comments \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



## 2016 Computer Science Professional Development Program Grant Memorandum of Understanding

This memorandum of understanding (MOU) is being entered into between the Arkansas Department of Education (ADE) and the Arkansas STEM Center, Arkansas Educational Service Cooperative, Arkansas public university, Arkansas public community college, or other public institution listed in Section I, hereinafter "INSTITUTION".

### Section I – INSTITUTION Information

Name: **University of Arkansas at Little Rock**  
Address: **2801 S. University Avenue**  
**Little Rock, AR 72204**

Contact Name: **Kenji Yoshigoe**  
Contact Email: **kxyoshigoe@ualr.edu**

### Section II – Funding Information

Grant funding is subject to the availability of funds appropriated by legislative act for the purpose stated in the grant award. ADE reserves the right to reduce or void the grant award upon appropriated funds becoming reduced or unavailable. In addition, a grant agreement may be terminated by ADE at any time for any reason upon notice to the grant recipient.

ADE reserves the right to reduce funding if the initial funding projections are determined not to have been realistic based upon the number of actual applicants or other factors. Should additional funds become available for distribution, ADE will determine how these funds will be distributed.

Program funds shall not be obligated for expenditure before the beginning date of the grant or after the ending date of the grant. Funds may be requested only for those items that are reasonable and necessary for accomplishing the objectives of the program as defined in the application notice and for implementing activities as described.

Costs not included in the approved grant budget, including approved budget revisions, will not be reimbursed by ADE. Any costs that are incurred either before the start of the grant award or after the expiration of the grant award performance period are not allowable.

INSTITUTION must receive the benefit and liquidate all obligations incurred under the grant award no later than June 30, 2017.

For costs to be allowable to be charged to a grant, costs must generally meet the following criteria:

- Be necessary and reasonable for the performance of the grant and be allocable under the applicable cost principles



- Conform to limitations or exclusions set forth in the grant agreement as to types or amount of costs
- Be consistent with policies and procedures that apply uniformly to federally or state-funded activities and activities funded from other sources
- Be determined in accordance with generally accepted accounting principles (GAAP)
- Be adequately documented.

ADE will provide INSTITUTION up to **\$35,335.00** in grant funding for the ADE approved 2016 Computer Science Professional Development Program. Forward funding, not to exceed 50% of total program funding, in the amount of **\$17,667.00** will be made available to INSTITUTION on or before **April 29, 2016**. The remaining funding amount will be made available to INSTITUTION as reimbursements per the following schedule, subject to ADE receipt of invoices and attestations of meeting program requirements and MOU assurances.

The grant period for this funding is April 1, 2016 – June 30, 2017; INSTITUTION will return all funds not liquidated before June 30, 2017 to ADE by July 31, 2017.

#### **FY2016 – Q4 Reimbursement**

- Expenses, beyond already transferred amount, through June 20, 2016
- Invoice and attestation due to ADE on or before June 22, 2016
- Made available on or before July 29, 2016

#### **FY2017 – Q1 Reimbursement**

- Expenses, beyond already transferred amounts, through September 30, 2016
- Invoice and attestation due to ADE on or before October 4, 2016
- Made available on or before November 11, 2016

#### **FY2017 – Q2 Reimbursement**

- Expenses, beyond already transferred amounts, through December 31, 2016
- Invoice and attestation due to ADE on or before January 13, 2017
- Made available on or before February 24, 2017

#### **FY2017 – Q3 Reimbursement**

- Expenses, beyond already transferred amounts, through March 31, 2017
- Invoice and attestation due to ADE on or before April 5, 2017
- Made available on or before May 5, 2017

#### **FY2017 – Q4 Reimbursement**

- Expenses, beyond already transferred amounts, through June 20, 2017
- Invoice and attestation due to ADE on or before June 26, 2017



- Made available on or before July 29, 2017

### **FY2017 – Final Reimbursement**

- Expenses, beyond already transferred amounts, through June 30, 2017
- Invoice and attestation due to ADE on or before July 10, 2017
- Made available on or before August 4, 2017

### **Section III – Program Delivery**

INSTITUTION will provide professional development in the content area of computer science in accordance with the attached Computer Science Professional Development Program Grant Application 2016 submitted to ADE by INSTITUTION. Any provisions within the attached Computer Science Professional Development Program Grant Application 2016 that are in conflict with any provision within this MOU are declared invalid, and INSTITUTION must adhere to all provisions within this MOU.

INSTITUTION must commence and perform project activities according to established timelines. Failure to do so may result in reduction and reallocation of funds.

### **Section IV - Funding Use**

INSTITUTION will utilize all funding awarded under this grant for activities to provide professional development to Arkansas educators in the content area of computer science, at no charge to said educators or their employing institutions.

INSTITUTION will use Fiscal control and accounting procedures that permit the tracing of funds to a level of expenditure adequate to establish that funds have been used in accordance with grant award. The INSTITUTION must maintain effective control over and accountability for all funds, property, and other assets. The INSTITUTION'S financial management system must provide for the following:

- Identification, in its accounts, of grant awards received and expended for the program under which they were received.
- Accurate, current, and complete disclosure of the financial results of each grant award or program
- Records that identify adequately the source and application of grant funds
- Effective control over, and accountability for, all funds, property and other assets

INSTITUTION acknowledges that funding awarded under this grant is subject to all applicable federal and state laws and regulations in addition to the provisions herein Section II – Funding Information.

INSTITUTION acknowledges that it has reported planned uses for the funding and will not substantially deviate from the program approved and as indicated within the attached Computer



Science Professional Development Program Grant Application 2016 submitted to ADE by  
INSTITUTION

INSTITUTION will not use any grant award funds to either forward fund or reimburse program participants for any PRAXIS fees; INSTITUTION will direct participants that are seeking licensure endorsement to use the ADE CS PRAXIS Reimbursement Form found at <http://goo.gl/yHWjFF>.

INSTITUTION will insure, prior to any participant receiving a stipend as allowed under this MOU, that participant must satisfy one of the following requirements on or before June 1, 2017:

- for classroom educators completing a K-8 focus program must take part in follow-up opportunities for one school year through which they demonstrate proper CS embedding within their classes and support of other educators within their school and/or district. (maximum stipend amount of \$1,250.00)
- for district or school level educators completing a K-8 focus program must take part in follow-up opportunities for one school year through which they demonstrate how they are supporting broad classroom integration of the CS embedded standards through ongoing and meaningful professional development. (maximum stipend amount of \$1,250.00)
- for classroom educators completing the 7th/8th Grade Coding Block focus program must successfully instruct students in the 7th/8th Grade Coding Block standards and demonstrate support of other educators within their school and/or district in the 7th/8th Grade Coding Block standards and the embedded K-8 Computer Science Standards. (maximum stipend amount of \$1,500.00)
- for district or school level educators completing the 7th/8th Grade Coding Block focus program must take part in follow-up opportunities for one school year through which they demonstrate how they are supporting district-wide or school-wide implementation and instruction of the 7th/8th Grade Coding Block and the embedded K-8 Computer Science Standards through ongoing and meaningful professional development. (maximum stipend amount of \$1,500.00)
- for any individual completing an approved professional development offering focused on preparation to pass the assessment necessary to gain an ADE Computer Science Endorsement or provisional license for non-traditional programs must be successful in attaining the ADE Computer Science Endorsement (or ADE Provisional License in Computer Science) and supporting the instruction of one or more of the approved Act 187 courses through either a face-to-face or hybrid instructional model for the 2016-2017 school year. (maximum stipend amount of \$1,750.00)

INSTITUTION and participant will ensure that acceptance of any stipend is allowed under all applicable laws and rules, including district policy, prior to stipend award.

If the INSTITUTION fails to comply with any of the terms of the grant award, whether stated in a federal statute or regulation, an assurance, a state plan, application, grant award notification, or elsewhere, ADE may take one or more of the following actions:



- Temporarily withhold payments pending correction of the deficiency by the grant recipient;
- Disallow or deny both use of funds and matching credit for all or part of the cost of the activity or action not in compliance with the grant;
- Wholly or partly suspend or terminate the grant award;
- Withhold further awards for the grant program; or,
- Take other remedies that may be legally available

## **Section V – Reporting**

INSTITUTION will complete and submit with each reimbursement request an ADE Grant Budget/Expenditure Report and Budget Narrative found at <http://goo.gl/forms/1ed8hVU4x5>. Reimbursement funds will not be released to INSTITUTION until the requisite Grant Budget/Expenditure Report and Budget Narrative is submitted.

INSTITUTION will report to the ADE grant coordinator for this grant a list, in .xls file format, of all participants on July 1, 2016 and June 30, 2017 and include the following participant information:

- First and Last Name
- Arkansas Educator Licensure System Case ID – available at <https://goo.gl/gDI4hl>
- Official Email Address
- Employing LEA
- Current Licensure Codes – *same cell, comma delimited*
- Grades Currently Teaching – *using grade bands K-2, 3-5, 6-8, 9-12*
- Percentage of program competition – *INSTITUTION determined*
- Number of scheduled PD hours, as part of this MOU, in which participant was expected to participate
- Number of scheduled PD hours, as part of this MOU, in which participant has actually participated
- Amount of any stipend awarded to participant – *N/A for July 1, 2016 report*

## **Section VI – Failure to Comply**

ADE reserves the right to revoke a grant award for reasons including but not limited to the following:

- Noncompliance with the specified purpose of the grant award
- Failure to account for grant funds in accordance with standards for financial management, to retain proper documentation for grant expenditures, or to provide information to auditors or program monitors
- Failure to provide accurate, timely, and complete information as requested by ADE to evaluate the effectiveness of the grantee



## Section VII – Other Assurances

Administration of the program, activities, and services facilitated by the funding awarded within this MOU will be in accordance with all applicable state and federal statutes and regulations.

INSTITUTION will evaluate its program semiannually to assess its progress toward achieving its goals and objectives and use its evaluation results to refine, improve, and strengthen its program and to refine its goals and objectives as appropriate.

INSTITUTION will provide ADE representatives, and/or other state agency representatives, reasonable access to the campus and classrooms where programs and/or activities facilitated by grant funds awarded under this MOU.

INSTITUTION must disclose, in a timely manner, in writing to ADE all violations of criminal law involving, but not limited to fraud, bribery, or gratuity violations potentially affecting the grant recipient. Failure to make required disclosures can result in any of the actions described in the **Failure to Comply** section.

INSTITUTION will select and utilize a system of participant selection that is impartial and does not exclude, based on district of employ or federally protected class, any ADE Licensed Arkansas Educator.

INSTITUTION must disclose in writing any potential conflict of interest between the recipient and ADE employees. In addition, all grant recipients that receive in excess of \$25,000 will be required to complete the **“Contract and Grant Disclosure and Certification Form.”**

## Section VIII – Commingling of Funds

INSTITUTION must not deposit or record funds in a general account without the ability to identify each specific source of funds for any expenditures, which is known as commingling of funds. Funds from each Federal, State, local, and private funding source must be identified with a clear audit trail for each source. The accounting systems of all grant recipients must ensure that grant funds are not commingled with funds from other State or Federal agencies or private entities. Funds specifically budgeted and/or received for one project may not be used to support another

## Section IX – Record Retention

Financial records, supporting documents, statistical records and all other records pertinent to the grant award shall be retained by the grant recipient for four years following the end of the grant award performance period. The retention requirement extends to books of original entry, source documents supporting accounting transactions, the general ledger, subsidiary ledgers, personnel and payroll records, cancelled checks, and related documents and records.

- Source documents include paper or electronic copies of all grant awards, applications and required financial and narrative reports.



- Personnel and payroll records shall include the signed time and attendance reports for all individuals included in the project, whether they are employed full-time, part-time, or on a volunteer basis.
- Time and effort reports are required for employees with grant-funded salaries.

Grant recipients must further agree to permit access to these records to ADE program or fiscal staff, or any of their authorized representatives, as needed for monitoring purpose.

**Section X – Carryover of Grant Funds**

All encumbrances/obligations shall occur on or between April 1, 2016 and June 30, 2017.

INSTITUTION must receive the benefit and liquidate all obligations incurred under the grant award no later than June 30, 2017

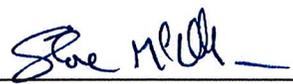
If the grant recipient has not obligated all of its grant funds by June 30, 2017, any unexpended grant funds will be requested for return to ADE.

  
 \_\_\_\_\_  
 Johnny Key, Commissioner of Education  
 Arkansas Department of Education

4/26/16  
 \_\_\_\_\_  
 Date

**Steve McClellan**  
 \_\_\_\_\_  
 INSTITUTION Authorized Representative  
 Printed Name

**Vice Chancellor for Finance and Administration**  
 \_\_\_\_\_  
 INSTITUTION Authorized Representative  
 Title

  
 \_\_\_\_\_  
 INSTITUTION Authorized Representative  
 Signature

04-21-2016  
 \_\_\_\_\_  
 Date

(AS)



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\_\_\_\_\_  
Johnny Key, Commissioner of Education  
Arkansas Department of Education

\_\_\_\_\_  
Date

\_\_\_\_\_  
INSTITUTION Authorized Representative  
Printed Name

\_\_\_\_\_  
INSTITUTION Authorized Representative  
Title

\_\_\_\_\_  
INSTITUTION Authorized Representative  
Signature

\_\_\_\_\_  
Date

#20



**COMPLETE**

**Collector:** Web Link 1 (Web Link)  
**Started:** Wednesday, February 10, 2016 12:20:23 PM  
**Last Modified:** Friday, February 26, 2016 10:54:30 AM  
**Time Spent:** Over a week  
**IP Address:** 144.167.113.97

**PAGE 1: General Information**

<b>Q1: Organization Name</b>	University of Arkansas at Little Rock
<b>Q2: Organization Type</b>	Arkansas based public university
<b>Q3: Organization LEA (if applicable)</b>	N/A
<b>Q4: Organization Mailing Address (Line 1)</b>	2801 S. University Avenue
<b>Q5: Organization Mailing Address (Line 2) - optional</b>	<i>Respondent skipped this question</i>
<b>Q6: Organization Mailing Address (City)</b>	Little Rock
<b>Q7: Organization Mailing Address (Zip Code)</b>	72204
<b>Q8: Contact Person (First Name)</b>	Kenji
<b>Q9: Contact Person (Last Name)</b>	Yoshigoe
<b>Q10: Contact Person (Email Address)</b>	kxyoshigoe@ualr.edu
<b>Q11: Contact Person (Telephone XXX-XXX-XXXX)</b>	501-569-8138
<b>Q12: Contact Person (Title)</b>	Professor and Chair, Computer Science

**PAGE 2: Program Focus Selection**

<b>Q13: Please select a program focus for this application (NOTE: each organization may submit a separate application for each focus area for which they wish to offer)</b>	Computer Science Endorsement and High School Level Computer Science Instruction Preparation
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**PAGE 3: Program Information**

**Q14: Provide a program description. Be certain to provide information related to the curriculum, content guide, and materials to be utilized**

We propose an 8-week summer program for high school teachers in Arkansas to prepare for high school level Computer Science instruction. All instructions will take place at the Donaghey College of Engineering and Information Technology at the University of Arkansas at Little Rock (UALR).

**I. Curriculum**

A well-defined curriculum is very important to prepare participants for their computer science teaching certification. The proposed Computer Science curriculum covers Competencies for Secondary Teachers: Computer Science / Mathematics, Grade 7-12. In particular, the curriculum will broadly cover the following knowledge areas: Computational Thinking; Collaboration; Computer and Communication Devices; Community, Global, and Ethical Impacts; and Disciplinary Literacy.

The curriculum of this proposed teacher preparation program consisting of Programming & Computer Literacy, Data Structures and Algorithms, Software Engineering and Education in Computer Science courses, educates participants to become capable of solving problems, programming communicating and computing devices, designing systems by drawing on mathematical and engineering thinking with disciplines, and experiencing the importance of collaboration to tackle problems. The curriculum also guides participants to impact the society by professional and social conduct. The goal of the curriculum is to prepare the participants to broaden their computer science education towards high school teaching certification.

The objectives derived from the goal are,

1. To enhance participants' professional identity as computer science teachers;
2. To enable the participants to apply a variety of computer science teaching methods in their high school classes;
3. To enable participants to apply pedagogical tools for teaching computer science; and
4. To expose participants to experience the social impacts in a cooperative and supportive environment through the work and class discussions as a team.

**II. Content Guide**

The guide is about the conducting of the teaching to achieve the above objectives of the program. The courses are Programming & Computer Literacy, Data Structures and Algorithms, Software Engineering, and Education in Computer Science with the components of education and social aspects. The participants are high school computer science teachers. The teaching methods for teaching these courses are through learning by hands on experience through teaching tools.

Activity-based teaching method will be employed for teaching the courses. Through the class activities, the participants will explore their problem solving strategies, design their solutions to the problems, and obtain the immediate feedback from the instructors or peers. For software engineering, participants will involve in class tasks. Through the team tasks, participants will be able to explore problems and also learn the educational and social impacts.

Participants learn the computer science disciplines in the classrooms in addition to the class activities. Pedagogical tools for teaching the computer science disciplines through well-selected class tasks from cognitive and pedagogical perspectives will be used to enhance the participants' understanding of the computer science disciplines. Various possible solutions of class tasks can be presented by the instructor or the participants and be discussed with the whole class. Variety of mental/software tools, such as graphical tools for visualization of the problem solving process and concept maps, can be used to help participants learn the concepts, classify the concepts, integrate the concepts into a solid concept map where all the concepts of computer science can be tightly linked together. Of course, the success of the teaching and participants' learning will be observed through the monitoring and evaluations of the participants' progress.

**III. Materials**

Instructors will develop course materials including course syllabi and class tasks for individual and team-based learning activities in the class. Furthermore, the instructors will integrate educational and social components of computer science in the courses. The instructors will customize the course to align with the Praxis Computer Science Exam. Questions similar to that appearing in the Praxis exam will be prepared and given to the participants so they will gain hands on experience prior to taking the actual exam.

**Q15: If your organization plans to contract with an outside vendor/provider to provide professional development, provide the name and website URL for that vendor/provider. (N/A for not applicable)**

N/A

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**Q16: Provide a schedule for the program. Be certain to include the days, times, and number of hours that the sessions are to meet.**

All courses being offered as a part of this project will be fully face-to-face instructions. The total number of session hours is 120 hours (6/4/16~7/29/16).

Course Materials Preparation Period (By Instructors)  
Dates: 5/15/16 ~ 6/3/16

Pre-assessment Week (Online assessment)  
Dates: 5/15/16~5/20/16

Applicants will be tested out to assess the participants' knowledge in basic computer literacy as well as programming experience.

Catch-Up Day

Date: 6/4 (9AM-12:30PM, Saturday): Catch-Up Day will be used primarily for those who have minimal knowledge in computer literacy and programming experience (e.g., based on the pre-assessment results).

Total hours of instruction: 3.33 hours

Programming & Computer Literacy

Dates: 6/6/16 ~ 7/1/16

Times: 9AM-10:50AM & 11AM-12:30PM

Session Days: Monday, Wednesday, and Friday

Total hours of instruction: 40 hours (3.33 hours/session x 12 sessions)

(7/1 Praxis mock exam)

Data Structures and Algorithms

Dates: 7/5/16 ~ 7/29/16

Session Time: 9AM-10:50AM & 11AM-12:30PM

Session Days: Monday, Tuesday, Wednesday, and Thursday

Total hours of instruction: 50 hours (3.33 hours/session x 15 sessions)

Software Development

Dates: 7/8/16 ~ 7/29/16

Session Time: 9AM-10:50AM, 11AM-12:30PM

Session Days: Friday

Total hours of instruction: 13.3 hours (3.33 hours/session x 4 sessions)

(7/29 Praxis mock exam)

Education in Computer Science

Dates: 7/8/16 ~ 7/29/16

Session Time: 1:30PM-2:50PM, & 3PM-4:30PM

Session Days: Friday

Total hours of instruction: 13.3 hours (3.33 hours/session x 4 sessions)

Post-Assessment Period (by Program Director and Program Manager)

Dates: 8/1/16 ~ 8/15/16

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**Q17: Provide a detailed plan to document evidence of program performance and success of the participants including all required and requested reporting.**

We will closely document and monitor the progress and success of the program and participants by:

- Pre-assessment of participants' background in computer science;
- Assessment of participants' pedagogical tasks including course-summary exams, presentation of computer science topics, activity-based work, etc;
- Assessment of participants' non-pedagogical tasks including presentations about a computer science topic, problem solving skills, team dynamics, communication skills, social aspects, peer teaching, etc;
- Class tasks assessment of all participants in each course; and
- Post-assessment of participants' success through participants' attempts as well as pass/fail for the Praxis Computer Science exam.

All materials developed by participants will be included in individual portfolio for assessment of participant learning. The channels of continuous monitoring and discussion of the participants' progress between instructors and participants will be implemented. Portfolio should also serve to identify the participants' weaknesses and strengths. Portfolios should encourage participants to take their responsibility on their learning progress and improve their pedagogical skills and knowledge in computer science.

All materials developed by participants will be included in individual portfolio for assessment of participant learning. The channels of continuous monitoring and discussion of the participants' progress between instructors and participants will be implemented. Portfolio should also serve to identify the participants' weaknesses and strengths. Portfolios should encourage participants to take their responsibility on their learning progress and improve their pedagogical skills and knowledge in computer science.

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**Q18: Provide the qualifications required for all staff and instructors. If a project manager or director can be identified, please do so at this time.**

Kenji Yoshigoe, PhD (Project Director) - Dr. Yoshigoe received his Ph.D. degree in Computer Science and Engineering from the University of South Florida. He is Chair and Professor of Computer Science, Director of Computational Research Center, and the Director of NSA/DHS Designated National Center of Academic Excellence in Cyber Defense Education (CAE-CDE) at the University of Arkansas at Little Rock (UALR).

Chia-Chu Chiang, PhD (Project Manager) - Dr. Chiang received PhD in Computer Science and Engineering from Arizona State University. He has worked at Viasoft Company in Phoenix for five years. He is a Professor and the Undergraduate Program Coordinator at Computer Science department UALR. Dr. Chiang regularly teaches C/C++, Data Structures and Algorithms, Databases, and Software Engineering.

Suzan Anwar - Ms. Anwar has received MS in Computer Science at Salahaddin University in Iraq-Kurdistan Reign-Erbil. She was a full-time instructor at Salahaddin University from 2001 to 2013 during which she has taught a variety of Computer Science courses including Programming I, Programming II, Microprocessor, Computer Logic, Computer Graphics, Image Processing, Artificial Intelligence, Data Structure, and Database. She is currently a PhD student at UALR and has served as a graduate assistant for several courses (Software Engineering, Image Processing, Programming II).

Sandra Leiterman - Sandra is a Master Teacher at UALR Teach. She has a BS in Middle School Education (math/science), and a Graduate Certificate in Gifted & Talented Education from UALR. She most recently received an MSE in C&I – Digital Teaching and Learning from Kansas State University. Sandra taught middle school math and science in both the Pulaski County Special School District and the Little Rock School District. She wrote a state approved STEM curriculum for an elective course at Fuller Middle School and helped to implement a number of extra curricular project based competition teams which eventually led to FMS being recognized as a STEM School of Excellence by the International STEM Education Association in 2013. She continues to mentor an all girls robotics team at Mills High School, and is increasing efforts to expand the Technology Student Association (TSA) in Arkansas. Sandra currently teaches Project Based Instruction, Perspectives of Math and Science, Knowing and Learning in Math.

Computer Science Professional Development Program Grant Application 2016

<b>Q19: Total Grant Amount Requested</b>	54363.0
<b>Q20: Grant Forward Funding Requested in Dollar Amount (maximum of 50% of total proposed grant) - NOTE: organization will be required to return all unused or excess funding once program completion information is submitted.</b>	27181
<b>Q21: Proposed Cost Per Participant</b>	3624.0
<b>Q22: Estimated Number of Participants</b>	15.0

**Q23: Summary of the Program's Proposed Budget**

- Item 1: Two instructors (Chia-Chu Chiang & Sandra Leiterman): \$14,955
- Item 2: One graduate assistant (Suzan Anwar): \$4,870
- Item 3: Indirect Cost (42.5% of salary and fringes from items 1 & 2): \$8,288
- Item 4: Stipend for 15 participants: \$26,250
- Proposed Total Budget: \$54,363\* (Item 1 + Item 2 + Item 3 + Item 4)

\* Total amount of budget needed is reduced (by \$26,250 - (\$1,750 x actual # of participants)) if less than 15 participants attend the proposed project.

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Supplementary Information for Section 19~25

\*19. Total Grant Amount Requested

\$54,363 (which includes a total amount of stipends to be allocated for 15 participants)

20. Grant Forward Funding Requested in Dollar Amount (maximum of 50% of total proposed grant) - NOTE: organization will be required to return all unused or excess funding once program completion information is submitted.

\$27,181

\*21. Proposed Cost Per Participant

\$3,624 (including \$1,750 stipend per participant)

\*22. Estimated Number of Participants

15

\*23. Summary of the Program's Proposed Budget

- Item 1: Two instructors (Chia-Chu Chiang & Sandra Leiterman): \$14,955
- Item 2: One graduate assistant (Suzan Anwar): \$4,870
- Item 3: Indirect Cost (42.5% of salary and fringes from items 1 & 2): \$8,288
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- Proposed Total Budget: \$54,363\* (Item 1 + Item 2 + Item 3 + Item 4)

\* Total amount of budget needed is reduced (by \$26,250 - (\$1,750 x actual # of participants)) if less than 15 participants attend the proposed project.

24. Completer Individual Stipend Amount (if applicable)

\$1,750.00

25. Total Amount Allocated for Participant Stipends (if applicable)

\$26,250 (\$1,750 x 15 participants)

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**Q24: Completer Individual Stipend Amount (if applicable)** 1750.0

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**Q25: Total Amount Allocated for Participant Stipends (if applicable)** 26250.0

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**Q26: WE, THE UNDERSIGNED, CERTIFY that the information contained in this application, is complete and accurate to the best of our knowledge; that the necessary assurances of compliance with applicable state and federal statutes, rules, and regulations will be met; and, that the indicated organization designated in this application is authorized to administer this grant. WE FURTHER CERTIFY that the assurances listed above, have been or will be satisfied and that all facts, figures, and representations in this application are correct to the best of our knowledge.**

Yes

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**Q27: First and last name of the authorized Representative certifying this application on behalf of the organization.**

Tammie Cash

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**Q28: Title of authorized Representative certifying this application on behalf of the organization.**

Director, Office of Research and Sponsored Programs (ORSP)

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**Subject:** Re: Computer Science Professional Development Program Grant Application 2016 Additional Information

**Date:** Friday, March 18, 2016 at 2:22:20 PM Central Daylight Time

**From:** Kenji Yoshigoe

**To:** Anthony Owen (ADE)

**CC:** Dan Shelton

Dear Mr. Owen,

Thank you very much for giving us an opportunity to submit an amended proposal.

Please find the attached proposal from UALR. All modifications from the original proposal are highlighted in yellow marker for reviewers' convenience.

Please let me know if you need any clarification from us.

Regards,

Kenji Yoshigoe  
Chair and Professor of Computer Science,  
Director of UALR Computational Research Center (CRC), &  
Director of NSA/DHS Designated National Center of Academic Excellence in Cyber Defense Education (CAE-CDE)  
Donaghey College of Engineering and Information Technology  
University of Arkansas at Little Rock  
Phone: +1 501 569 8138  
Fax: +1 501 569 8144

On Mon, Mar 14, 2016 at 1:04 PM, Anthony Owen (ADE) <[Anthony.Owen@arkansas.gov](mailto:Anthony.Owen@arkansas.gov)> wrote:

Greetings,

Thank you for responding to my inquiry regarding your grant funding. Your proposed programs have been slated to be funded at various percentages. I will need an amended proposal from each of your organizations, demonstrating a plan to provide the PD at or below the percentage communicated. These amended proposals will need to be submitted via email (in PDF format) before 4:00p.m. Friday, March 18th. ADE will conduct an internal review and make final determination of award by March 25th. Please note that the reduction in expenditures may not be met through a reduction in number of estimated participants; this statement applies to all except U.C.A. because of their already low cost per participant.

If your revised proposal is approved, ADE will begin work on creating Memorandums of Understanding for each of your programs, which should be delivered to you electronically on or before Friday, March 25, 2016. These MOU's will need to be signed and returned no later than 4:00 p.m. on March 31, 2016. If you requested forward funding, I will work as quickly as I can to process those disbursements, but as you know it can take some time.

A comprehensive list of requirements will be in the MOU, but here are few early reminders/notifications:

- \* Participants may not be charged a fee to take part in any of these trainings
- \* Your PD must be open to any ADE licensed educator in the state, preference may be given to your local institutions, but your organization may not exclude someone only because they are not part of your co-op or group.
- \* Stipends may not be provided to the teachers until completion of the training (and other requirements as listed on the commissioner's memo announcing this grant)

\* If your proposal included PRAXIS fees, that amount should be/will be removed from your proposal, participants should use the CS PRAXIS reimbursement program already established by ADE

Feel free to contact me if you have any questions.

Thanks for all you do.

Sincerely,

Anthony A. Owen  
Coordinator of Computer Science  
Arkansas Department of Education  
Four State Capitol Mall; Room 302A  
Little Rock, AR 72201  
Office Phone: (501) 682-3386  
Cell Phone: (501) 218-4506  
Linkedin: [www.linkedin.com/in/AnthonyAOwen](http://www.linkedin.com/in/AnthonyAOwen)<<http://www.linkedin.com/in/AnthonyAOwen>>  
Email: [anthony.owen@arkansas.gov](mailto:anthony.owen@arkansas.gov)

Interested in the Arkansas Computer Science Initiative? Follow me on twitter  
[@AnthonyOwenADE](https://twitter.com/AnthonyOwenADE)<<https://twitter.com/AnthonyOwenADE>> and sign up for the Computer Science listserv at  
<http://goo.gl/forms/FqGJ2CtXe1>.

NOTICE: The contents of this email are not intended or offered as legal advice. Transmission of this information is not intended to create, and receipt does not constitute, a lawyer - client relationship between, the author or the Arkansas Department of Education and the recipient or any other reader.

**Summer Computer Science Program for High School Teachers**  
(Revised texts are highlighted in yellow marker)

PI: Kenji Yoshigoe  
Department: Computer Science  
College: Donaghey College of Engineering and Information Technology  
Institution: University of Arkansas at Little Rock

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- \*1. **Organization Name:** University of Arkansas at Little Rock
- \*2. **Organization Type:** Arkansas-based public university
- \*3. **Organization LEA (if applicable):** N/A
- \*4. **Organization Mailing Address (Line 1):** 2801 S. University Avenue
- 5. **Organization Mailing Address (Line 2) - optional**
- \*6. **Organization Mailing Address (City):** Little Rock
- \*7. **Organization Mailing Address (Zip Code):** 72204
- \*8. **Contact Person (First Name):** Kenji
- \*9. **Contact Person (Last Name):** Yoshigoe
- \*10. **Contact Person (Email Address):** kxyoshigoe@ualr.edu
- \*11. **Contact Person (Telephone XXX-XXX-XXXX):** 501-569-8138
- \*12. **Contact Person (Title):** Professor and Chair of Computer Science
- \*13. **Please select a program focus for this application (NOTE: ...)**

Computer Science Endorsement and High School Level Computer Science Instruction  
Preparation

**\*14. Provide a program description. Be certain to provide information related to the curriculum, content guide, and materials to be utilized**

We propose an 8-week summer program for high school teachers in Arkansas to prepare for high school level Computer Science instruction. All instructions will take place at the Donaghey College of Engineering and Information Technology at the University of Arkansas at Little Rock (UALR).

**I. Curriculum**

A well-defined curriculum is very important to prepare participants for their computer science teaching certification. The proposed Computer Science curriculum covers Competencies for Secondary Teachers: Computer Science / Mathematics, Grade 7-12. In particular, the curriculum will broadly cover the following knowledge areas: Computational Thinking; Collaboration; Computer and Communication Devices; Community, Global, and Ethical Impacts; and Disciplinary Literacy.

The curriculum of this proposed teacher preparation program consisting of Programming & Computer Literacy, Data Structures and Algorithms, Software Engineering and Education in Computer Science courses, educates participants to become capable of solving problems, programming communicating and computing devices, designing systems by drawing on mathematical and engineering thinking with disciplines, and experiencing the importance of collaboration to tackle problems. The curriculum also guides participants to impact the society by professional and social conduct. The goal of the curriculum is to prepare the participants to broaden their computer science education towards high school teaching certification.

The objectives derived from the goal are,

1. To enhance participants' professional identity as computer science teachers;
2. To enable the participants to apply a variety of computer science teaching methods in their high school classes;
3. To enable participants to apply pedagogical tools for teaching computer science; and
4. To expose participants to experience the social impacts in a cooperative and supportive environment through the work and class discussions as a team.

**II. Content Guide**

The guide is about the conducting of the teaching to achieve the above objectives of the program. The courses are Programming & Computer Literacy, Data Structures and Algorithms, Software Engineering, and Education in Computer Science with the components of education and social aspects. The participants are high school computer science teachers. The teaching methods for teaching these courses are through learning by hands on experience through teaching tools.

Activity-based teaching method will be employed for teaching the courses. Through the class activities, the participants will explore their problem solving strategies, design their solutions to the problems, and obtain the immediate feedback from the instructors or peers. For software engineering, participants will involve in class tasks. Through the team tasks, participants will be able to explore problems and also learn the educational and social impacts.

Participants learn the computer science disciplines in the classrooms in addition to the class activities. Pedagogical tools for teaching the computer science disciplines through well-selected class tasks from cognitive and pedagogical perspectives will be used to enhance the participants' understanding of the computer science disciplines. Various possible solutions of class tasks can be presented by the instructor or the participants and be discussed with the whole class. Variety of mental/software tools, such as graphical tools for visualization of the problem solving process and concept maps, can be used to help participants learn the concepts, classify the concepts, integrate the concepts into a solid concept map where all the concepts of computer science can be tightly linked together. Of course, the success of the teaching and participants' learning will be observed through the monitoring and evaluations of the participants' progress.

### **III. Materials**

Instructors will develop course materials including course syllabi and class tasks for individual and team-based learning activities in the class. Furthermore, the instructors will integrate educational and social components of computer science in the courses. The instructors will customize the course to align with the Praxis Computer Science Exam. Questions similar to that appearing in the Praxis exam will be prepared and given to the participants so they will gain hands on experience prior to taking the actual exam.

**\*15. If your organization plans to contract with an outside vendor/provider to provide professional development, provide the name and website URL for that vendor/provider. (N/A for not applicable)**

**N/A**

**\*16. Provide a schedule for the program. Be certain to include the days, times, and number of hours that the sessions are to meet.**

All courses being offered as a part of this project will be fully face-to-face instructions. The total number of session hours is 120 hours (6/4/16~7/29/16).

### Course Materials Preparation Period (By Instructors)

Dates: 5/15/16 ~ 6/3/16

### Pre-assessment Week (Online assessment)

Dates: 5/15/16~5/20/16

Applicants will be tested out to assess the participants' knowledge in basic computer literacy as well as programming experience.

### Catch-Up Day

Date: 6/4 (9AM-12:30PM, Saturday): Catch-Up Day will be used primarily for those who have minimal knowledge in computer literacy and programming experience (e.g., based on the pre-assessment results).

Total hours of instruction: 3.33 hours

### Programming & Computer Literacy

Dates: 6/6/16 ~ 7/1/16

Times: 9AM-10:50AM & 11AM-12:30PM

Session Days: Monday, Wednesday, and Friday

Total hours of instruction: 40 hours (3.33 hours/session x 12 sessions)  
(7/1 Praxis mock exam)

### Data Structures and Algorithms

Dates: 7/5/16 ~ 7/29/16

Session Time: 9AM-10:50AM & 11AM-12:30PM

Session Days: Monday, Tuesday, Wednesday, and Thursday

Total hours of instruction: 50 hours (3.33 hours/session x 15 sessions)

### Software Development

Dates: 7/8/16 ~ 7/29/16

Session Time: 9AM-10:50AM, 11AM-12:30PM

Session Days: Friday

Total hours of instruction: 13.3 hours (3.33 hours/session x 4 sessions)  
(7/29 Praxis mock exam)

### Education in Computer Science

Dates: 7/8/16 ~ 7/29/16

Session Time: 1:30PM-2:50PM, & 3PM-4:30PM

Session Days: Friday

Total hours of instruction: 13.3 hours (3.33 hours/session x 4 sessions)

Post-Assessment Period (by Program Director and Program Manager)

Dates: 8/1/16 ~ 8/15/16

**\*17. Provide a detailed plan to document evidence of program performance and success of the participants including all required and requested reporting.**

We will closely document and monitor the progress and success of the program and participants by:

- Pre-assessment of participants' background in computer science;
- Assessment of participants' pedagogical tasks including course-summary exams, presentation of computer science topics, activity-based work, etc;
- Assessment of participants' non-pedagogical tasks including presentations about a computer science topic, problem solving skills, team dynamics, communication skills, social aspects, peer teaching, etc;
- Class tasks assessment of all participants in each course; and
- Post-assessment of participants' success through participants' attempts as well as pass/fail for the Praxis Computer Science exam.

All materials developed by participants will be included in individual portfolio for assessment of participant learning. The channels of continuous monitoring and discussion of the participants' progress between instructors and participants will be implemented. Portfolio should also serve to identify the participants' weaknesses and strengths. Portfolios should encourage participants to take their responsibility on their learning progress and improve their pedagogical skills and knowledge in computer science.

**\*18. Provide the qualifications required for all staff and instructors. If a project manager or director can be identified, please do so at this time**

Kenji Yoshigoe, PhD (Project Director) - Dr. Yoshigoe received his Ph.D. degree in Computer Science and Engineering from the University of South Florida. He is Chair and Professor of Computer Science, Director of Computational Research Center, and the Director of NSA/DHS Designated National Center of Academic Excellence in Cyber Defense Education (CAE-CDE) at the University of Arkansas at Little Rock (UALR).

Chia-Chu Chiang, PhD (Project Manager) - Dr. Chiang received PhD in Computer Science and Engineering from Arizona State University. He has worked at Viasoft Company in Phoenix for five years. He is a Professor and the Undergraduate Program

Coordinator at Computer Science department UALR. Dr. Chiang regularly teaches C/C++, Data Structures and Algorithms, Databases, and Software Engineering.

Suzan Anwar - Ms. Anwar has received MS in Computer Science at Salahaddin University in Iraq-Kurdistan Reign-Erbil. She was a full-time instructor at Salahaddin University from 2001 to 2013 during which she has taught a variety of Computer Science courses including Programming I, Programming II, Microprocessor, Computer Logic, Computer Graphics, Image Processing, Artificial Intelligence, Data Structure, and Database. She is currently a PhD student at UALR and has served as a graduate assistant for several courses (Software Engineering, Image Processing, Programming II).

Sandra Leiterman - Sandra is a Master Teacher at UALR Teach. She has a BS in Middle School Education (math/science), and a Graduate Certificate in Gifted & Talented Education from UALR. She most recently received an MSE in C&I – Digital Teaching and Learning from Kansas State University. Sandra taught middle school math and science in both the Pulaski County Special School District and the Little Rock School District. She wrote a state approved STEM curriculum for a an elective course at Fuller Middle School and helped to implement a number of extracurricular project based competition teams which eventually led to FMS being recognized as a STEM School of Excellence by the International STEM Education Association in 2013. She continues to mentor an all girls robotics team at Mills High School, and is increasing efforts to expand the Technology Student Association (TSA) in Arkansas. Sandra currently teaches Project Based Instruction, Perspectives of Math and Science, Knowing and Learning in Math.

**\*19. Total Grant Amount Requested**

**\$35,335** (which includes a total amount of stipends to be allocated for 15 participants)

**20. Grant Forward Funding Requested in Dollar Amount (maximum of 50% of total proposed grant) - NOTE: organization will be required to return all unused or excess funding once program completion information is submitted.**

**\$17,667**

**\*21. Proposed Cost Per Participant**

**\$2,356 (after including \$1,300 stipend per participant)**

## **\*22. Estimated Number of Participants**

15

## **\*23. Summary of the Program's Proposed Budget**

- Item 1: Two instructors (Chia-Chu Chiang & Sandra Leiterman): \$8,806 (59% of the originally proposed budget)
- Item 2: One graduate assistant (Suzan Anwar): \$4,870
- Item 3: Indirect Cost (10% of salary and fringes from items 1 & 2): \$1,335 (16.1% of the originally proposed budget)
- Item 4: Stipend for 15 participants: \$19,500 (74.3% of the originally proposed budget)
- Item 5: eTextbook x 15 & Praxis Computer Science book x 2: \$823 (new items)
- Proposed Total Budget: \$35,335\* (Item 1 + Item 2 + Item 3 + Item 4 + Item 5)

\* Total amount of budget needed is reduced (by \$19,500 - (\$1,300 x actual # of participants)) if less than 15 participants attend the proposed project.

## **24. Completer Individual Stipend Amount (if applicable)**

\$1,300.00

## **25. Total Amount Allocated for Participant Stipends (if applicable)**

\$19,500 (\$1,300 x 15 participants)

**26. WE, THE UNDERSIGNED, CERTIFY that the information contained in this application, is complete and accurate to the best of our knowledge; that the necessary assurances of compliance with applicable state and federal statutes, rules, and regulations will be met; and, that the indicated organization designated in this application is authorized to administer this grant.**

**WE FURTHER CERTIFY that the assurances listed above, have been or will be satisfied and that all facts, figures, and representations in this application are correct to the best of our knowledge.**

Yes

**\*27. First and last name of the authorized Representative certifying this application on behalf of the organization.**

Tammie Cash

**28. Title of authorized Representative certifying this application on behalf of the organization.**

Director, Office of Research and Sponsored Programs (ORSP)

===

**Note:** UALR can further accommodate 10 additional participants (to serve a total of 25 participants) if the total project budget were increased by the participants' stipend for 10 additional participants.

Total project budget would be \$48,335 (\$35,335 + \$1,300 stipends x 10 additional participants).

Consequently, proposed cost per participant will be further reduced to \$1,933 (from \$2,356).

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Detailed Budget - ADE CS Licensure Proposal

		Annual Salary	Year 1	Total	EIT/DEPARTMENT COMMITMENT
A	<b>Senior Personnel</b>				
	Kenji Yoshigoe		\$0	\$0	
	Chia-Chu Chiang <b>10,856 ==&gt; 5645 (52% of the original)</b>	86,844	<b>\$5,645</b>	<b>\$5,645</b>	<b>\$868.44 &lt;== Requested EIT Commitment (1%</b>
	Sandra Leiterman (UALR Teach)		\$1,625	\$1,625	
				\$0	
	<b>TOTAL</b>		<b>\$7,270</b>	<b>\$7,270</b>	
B	<b>Other Personnel</b>			\$0	
	One full-time Graduate Students (\$18,000 x 1) 3 mo appt.(\$1500/month)	18000	4500	\$4,500	
C				\$0	
	<b>TOTAL</b>		<b>\$4,500</b>	<b>\$4,500</b>	
D	<b>Fringes- 32% 12-Month Fac / 1% student / 8% hourly/ 18% Summer Fac</b>		\$1,581	\$1,581	<b>\$156 &lt;== Requested EIT Commitment (fri</b>
				\$0	
	<b>TOTAL</b>		<b>\$1,581</b>	<b>\$1,581</b>	
	<b>Equipment 5,000 and over</b>			\$0	
	list items here		\$0	\$0	
E			\$0	\$0	
	<b>TOTAL</b>		<b>\$0</b>	<b>\$0</b>	
	<b>Travel</b>			\$0	
	Domestic		\$0	\$0	
F	Foreign		\$0	\$0	
	<b>TOTAL</b>		<b>\$0</b>	<b>\$0</b>	
G	<b>Participant Support Costs</b> <b>Books \$0 ==&gt; \$823</b>		<b>\$823</b>	<b>\$823</b>	<b>\$698 &lt;== Department Commitment</b>
	Stipends (\$1,300 per participants x 15) <b>1750 ==&gt; 1300 (74.3% of the original)</b>	1,300	<b>\$19,500</b>	<b>\$19,500</b>	
	<b>TOTAL</b>		<b>\$20,323</b>	<b>\$20,323</b>	
	<b>Other Direct Costs</b>			\$0	
	1. Materials and Supplies		\$0	\$0	
	2. Publication Costs/Documentation/Dissemination		\$0	\$0	
	3. GA health insurance 800 per year plus 3% inflation		\$0	\$0	
	4. Computer Services		\$0	\$0	
	5. Subawards		\$0	\$0	
H	6. Tuition		\$325	\$325	
	7. Other			\$0	
				\$0	
I	<b>TOTAL</b>		<b>\$325</b>	<b>\$325</b>	
J	<b>TOTAL DIRECT COSTS</b>		<b>\$33,999</b>	<b>\$33,999</b>	
k	<b>INDIRECT COSTS 8288 ==&gt; 1335 (16.1% of the original)</b>		<b>\$1,335</b>	<b>\$1,335</b>	
	<b>TOTAL INDIRECT AND DIRECT COSTS</b>		<b>\$35,335</b>	<b>\$35,335</b>	<b>\$1,024.76 &lt;== Requested total EIT commitme</b>

Originally Proposed Budet: \$54,363  
 Target Budget: \$35,336 (65% of the originally proposed budget)  
 TARGETED TOTAL PROJECT COST: \$35,336 (\$2,356/participants)

RATES	
indirect costs	0.1
fringe regular salary	0.26
fringe extra labor	0.08
fringe grad ast.	0.01
fringe student labor	0.08
inflation	0.03