

Collegiate Programs

**Advanced Vehicle Technology Competitions (AVTC)
Graduate Research Assistants (GRAs) and Clean Cities
University Workforce Development Program (CCUWDP)**

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OVERVIEW: Collegiate Programs – Advanced Vehicle Technology Competition Graduate Research Assistants (AVTC GRAs) and Clean Cities University Workforce Development Program (CCUWDP)

Timeline

- Annual, calendar year project

Budget

- Vehicle Technologies Office
- Budget Categories
 - Education and outreach
 - Local coalition support
- **\$1.475 Total**

Barriers Addressed

- Lack of knowledge of alternative fuels and advanced vehicles of future professionals
- Lack of advanced vehicle technology curricula
 - Improving cross-disciplinary collaboration at university administration level

Team Members

- AVTC GRA Project Lead – Kristen De La Rosa, ANL
- Technical Team – ANL
- Communications and Logistics Team – ANL
- Clean Cities University Workforce Development Program Lead – Marcy Rood, Amanda McAlpin, ANL
- Local Clean Cities Mentors
- Universities

Partners

- DOE, General Motors, American Society for Engineering Education (ASEE)
- 29 additional automotive industry sponsors
- Local Clean Cities Coalitions
- Universities



RELEVANCE: Collegiate Programs – AVTC GRAs and CCUWDP

Objectives

- AVTC GRAs – Train communication and project managers in best business practices in their field and how to communicate technical subject matter in the automotive field; enable teams to prepare the marketplace to adopt future automotive technologies
- CCUWDP – Develop a future workforce who have hands-on/real-world experience planning and executing local initiatives that reduce petroleum consumption in transportation

Supports DOE Vehicle Technologies Deployment and Education and Outreach

- Encourage interest in and understanding of alternative fuels and advanced vehicle technologies among university students
- Expand universities' capacity for education in alternative fuels and advanced vehicle technologies
- Increase capacity for Coalitions to carry out the DOE Clean Cities mission through local voluntary actions to reduce petroleum use in transportation



AVTCs – Current Competition - EcoCAR 3

- EcoCAR 3 launched in Washington, DC, in April 2014
- Headline Sponsors include DOE and GM, and other North American partners
- Teams will be challenged to reduce the environmental impact of a mid-size car while maintaining the performance and consumer acceptability of the production counterpart
- Chevrolet Camaro selected as platform
- Communication and Project Management GRAs assist with business plans and outreach
- www.ecocar3.org

Arizona State University
California State University – Los Angeles
Colorado State University
Embry-Riddle Aeronautical University
Georgia Institute of Technology
McMaster University
Mississippi State University
Ohio State University
Pennsylvania State University
University of Tennessee, Knoxville
University of Alabama
University of Washington
University of Waterloo
Virginia Tech
Wayne State University
West Virginia University



Clean Cities University Workforce Development Program

- Began in Summer 2010 with 25 Coalitions by the U.S. Department of Energy's Clean Cities Program
- Since then, more than 60 Coalitions with 250+ interns have participated!
- Formed through a partnership with the EcoCAR series to assist with outreach to the community, fleets, and policy makers



PROJECT APPROACH: Collegiate Programs – AVTC GRAs and CCUWDP

Key Activities

- AVTC GRAs
 - 16 deliverables per team each year including 4 presentations and 12 written deliverables
 - Three workshops for Year One of EcoCAR 3, end-of-year competition in each of the 4 years
 - Mentorship and educational training
 - Sponsorship recruitment to provide support of team
 - Awards at the end of year competition in communications and project management, and best collaborative video with a local Clean Cities coalition
- CCUWDP
 - RFPs three terms per year, selection of Coalitions for program, and marketing, gathering and selecting resumes from students
 - Program management, option to distribute stipends
 - directly to students or coalitions
 - Educational webinars and mentorship through Google Group
 - End-of-semester presentations



MILESTONES: Collegiate Programs – AVTC GRAs and CCUWDP

CCUWDP was developed through a partnership with EcoCAR and ASEE at Argonne, which provides cross-fertilization through joint projects and outreach at the local level

2014 Milestones

- AVTC GRAs
 - Collect deliverables from Communication and Business GRAs
 - Process Outreach grants for EcoCar universities
 - Process payments for GRAs
- CCUWDP
 - Provide educational workforce training for 38 students in Fall 2014, 34 students in Summer 2014, and 38 students in Spring 2014, process student evaluations, and execute student funding packages for this work period
 - Collect evaluations of program 6 times a year and create reports based on information
 - Host 9 educational webinars providing technical and professional expertise
 - Release RFP for summer, fall, and spring terms to all Clean Cities coalitions, make selections, manage student selection, and release stipends
 - Manage and host all final student presentations
 - Write Fiscal Year 2014 Report



MILESTONES: Collegiate Programs – AVTC GRAs and CCUWDP

2015 Milestones

- AVTC GRAs
 - Approve and process Communications Manager and Project Manager assistantship applications for Spring 2015
 - Collect Communications/Project Manager Assistantship Deliverables and Evaluations for 2014-2015 Academic Year. Provide annual summary/progress report
 - Coordinate Fall Training for Communications Managers/Program Managers; score and evaluate all Fall deliverables from participants
 - Coordinate Spring Training for Communications Managers/Program Managers; score and evaluate all Spring deliverables from participants

- CCUWDP
 - Issued Summer 2015 semester CCUWDP RFP for Clean Cities Coalitions: 38 coalitions selected
 - Provide educational workforce training for 37 students in Spring 2015, process student evaluations, and execute student funding packages for this work period
 - Collect CCUWDP annual progress report documenting accomplishments, workforce focus areas, and postgraduate career placement in related industries
 - Facilitate intern selection process for fall semester and start educational programming



Project Accomplishments and Progress: Collegiate Programs – AVTC GRAs

- **Activities**
 - Project Management - New area of competition to reflect current industry business practices
 - Based on professional project management techniques and practices
 - Equip Project Managers and Communication Managers with professional development skills
- **Student Accomplishment Highlights**
 - Graduated more than 16,500 trained engineers and other professionals, 93 universities involved
 - Students better prepared to contribute to the automotive, energy, communication, and alternative fuel fields
 - Average of nearly 400 presentations to local community groups each competition series
 - 383 youth outreach events to local middle schools
 - 363% increase in awareness in local university markets through GRA outreach



PROJECT ACCOMPLISHMENTS & PROGRESS: Collegiate Programs

CCUWDP

- Applications have increased 30% from beginning of program
- Applications coming from stronger and more desirable schools
- Increase in the alumni network, with alumni contributing to webinars
- Over 20 students have taken positions at Clean Cities Coalitions
- CCUWDP students gain real-world work experience in a variety of fields



COLLABORATION & COORDINATION AMONG PROJECT TEAM

Collegiate Programs – AVTC GRAs and CCUWDP

AVTC GRAs

- Program at its core is a collaboration of more than 30 government, industry, and academic organizations
- Sponsoring organizations involved in mentoring, education, and resources
- AVTC GRAs expands the reach of Clean Cities and other communities on education and outreach
- Other DOE programs – secured SMEs and judges to participate in workshops, competition and score reports and team deliverables
- GRAs collaborate with CCUWDP students and Clean Cities coordinators on local education and outreach, including videos highlighting the partnership

CCUWDP

- More than 150 universities have aided recruitment
- Collaboration with other DOE programs include: Workplace Charging Challenge, IdleBox deployment, data collection, EcoCar 3, etc.
- Clean Cities coalitions mentor students in program, as well as increase communication and knowledge sharing among Coalitions
- Industry is hiring students or alumni involved in program and supporting students involvement in education and Clean Cities initiatives
- Students assist coordinators with DOE contract deliverables



SUMMARY: Collegiate Programs – AVTC GRAs

Continued Success

- 100% hire rate upon graduation since 2008
- 83% of AVTC graduates have entered automotive industry since inception
- Two graduate students/university in communication and project management funded each year
- Increase of opportunities to educate the public and policy makers about advanced vehicle technologies

Stakeholder Collaboration

- Leveraged DOE funding with significant collaboration and support from other levels of governments, industry, and academia
- Over 30 industry sponsors at the national level, and many more at local team level
- Donations of cash, hardware, software, and expertise
- Over 75% of AVTC alumni enter the automotive industry
- Assist Clean Cities with outreach events and social media and vice versa



SUMMARY: Collegiate Programs – CCUWDP

Continued Success

- Over 250 students participated in the program in the first 4 years
- Over 20 students hired into Clean Cities Coalitions as staff members
- 65% of students enter the energy and/or transportation industry upon graduation
- Builds capacity of Clean Cities coalitions

Stakeholder Collaboration

- ASEE for seamless disbursement of stipends and tax forms
- Clean Cities coalition members
- Propane and Education Research Council and its Clean Campus Initiative
- Local universities



Student Comments on AVTCs

- “Through AVTCs, I was continuously adding new skills to my resume such as event planning, developing media pitches, and writing and implementing a communications plan. Public relations is a field that is all about experience, and I cannot emphasize enough how my experience with AVTCs has prepared me for my career.” – **Sarah Kilbourne, Communication Manager, Virginia Tech AVTC team**
- “Not only was I able to challenge myself in ways that are not offered in any other university club, I was able to discover a career path. It is difficult to break into the automotive industry as a public relations student and my contacts with AVTC sponsors and organizers helped me set up interviews. I would not be where I am today without AVTCs and I am so thankful that I was able to be a part of an unrivaled inter-collegiate competition.” – **Claire Faccini, Communication Manager, Mississippi State University AVTC team**
- “The opportunity to develop operational strategies and lead high achieving individuals/teams in their execution is an experience that has advanced my skills beyond my peers and helps me daily in my job. The lessons I learned in the AVTC competitions are now tested skills and reinforced confidence that I will take with me throughout my career. I would seriously recommend the competition and experience to anyone who is fortunate enough to have the opportunity.” – **Anthony Strong, Business Manager, Waterloo AVTC team**



Student Comments on CCUWDP

- “I had the freedom and support to develop, from scratch, business models that will place both coalitions on a firmer footing financially and increase operational sustainability. CCUWDP allowed me to develop skills I never knew I had, and taught me how to make sustainability a reality.” – **Joshua Rego, Detroit/Ann Arbor Clean Cities**
- “After a year in the program, I have strengthened my resume alongside the leaders of public- and private-sector energy efficiency and petroleum reduction programs.” – **Jaime McKay, Greater Washington Region Clean Cities**
- “The Clean Cities internship program was a very valuable part of my education, and, as exemplified, a cornerstone to the start of my career. Being a part of program is like being on the leading edge of the much needed emerging energy market.” – **Jamison Walker, Virginia Clean Cities**



Summary

- Addresses Barriers
 - Lack of knowledge of alternative fuels and advanced vehicles of future professionals
 - Lack of advanced vehicle technology curricula
 - Improving cross-disciplinary collaboration at university administration level
- Supports DOE Vehicle Technologies Deployment and Education and Outreach
 - Encourage interest in and understanding of alternative fuels and advanced vehicle technologies among university students
 - Expand universities' capacity for education in alternative fuels and advanced vehicle technologies
 - Increase capacity for Coalitions to carry out the DOE Clean Cities mission through local voluntary actions to reduce petroleum use in transportation
- Met successfully all 2014 and on track for 2015 milestones
- Impacted more than 16,750 students through both programs
- Collaborate extensively between government, academia, industry, and Clean Cities Coalitions, as well as between both programs

