



A. JAMES CLARK
SCHOOL OF ENGINEERING

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Research Experiences for Teachers, Site RET in Engineering: Connecting with Community Colleges – Year 1



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RET in Engineering

NEEDS: 1) Increased participation in STEM classes (and careers) by majority and under-represented students
2) Mechanisms to increase student engagement and participation in STEM classes

APPROACH:

- Focus on community college faculty
- 6 week summer research program – research match based on interests more than background
- Weekly collaborative curriculum development seminar

OUTCOMES:

- Summer curriculum seminar key to translating research into relevant curriculum elements
- Biology and Mathematics community college faculty found useful links with engineering
- Diverse and very creative curriculum elements

BENEFITS:

- Increased student engagement in course material
- Increased understanding and appreciation of Engineering & Technology by community college science and math to transmit to students
- Curriculum elements that are solutions to problems not solutions in search of problems

DELIVERABLES:

- Curriculum elements
- Evaluation of impact of curriculum elements
- Within network sharing via implementation workshops and monthly on-line meetings

Example: Dr. Vedham Karpakakunjaram, Montgomery College; Principles of Biology I

- Summer research: Insect flight digitization and animation combined with modeling
- Curriculum element: Group puzzle exercise with computer generated stereolithographic scale models of animal, plant and bacterial cells

