




NCAR

**National Center for Atmospheric Research
Earth and Sun Systems Laboratory**

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Date: October 2, 2012
To: Al Cooper
From: John Orlando 
RE: Proposal to EOL to complete tasks for the TOGA (Trace Organic Gas Analyzer)

I am pleased to submit the following proposal for the remaining EOL funds intended for ACD's participation in DC3 and SEAC4RS. We have a number of tasks that we would like to complete for the Trace Organic Gas Analyzer, as follows:

- Finish parsing software to pull in aircraft data to our PC: time, altitude, position, and other trace gases.
- Borrow/demo/buy PID module from LabView and use it to test for better performance of temperature control on water, sample, and cryotrap.
- Software and instrument mods for full automation.
- Reduce run times from 120 seconds to 90 seconds by a series of lab experiments and parameter changes.
- New lower pressure drop sample trap design.
- Improve chromatogram by varying temperature ramps, etc.
- Investigate sub-ambient control of T₁, the initial temperature of the GC which is an important parameter in determining the retention time reproducibility.
- Investigate replacing bellows pump with a lighter, more powerful pump.

Eric Apel, ACD Project Scientist IV, will oversee the work of Alan Hills, Project Scientist II, and Rebecca (Becky) Hornbrook, Project Scientist I. Alan will provide the equivalent annualized amount of 15% effort to this project. Becky will provide the equivalent annualized amount of 45% effort. Standard benefits and overhead rates will apply, at work time level of 86%. Please see the attached budget for more details.

Please let me know if you require any additional information. Thank you for your consideration of this request.

cc: Gerry Albright
Geoff Cheeseman
Mike Reeves
Sue Schaufler

Proposal to EOL to complete tasks for the TOGA (Trace Organic Gas Analyzer)

Eric Apel

Tasks	% Time	Lab / Division	CSC Rate			
<p>Alan Hills, 747282 Core Funds</p> <p>Finish parsing software to pull in aircraft data to our PC: time, altitude, position, and other trace gases</p> <p>Borrow/demo/buy PID module from LabView and use it to test for better performance of temperature control on water, sample, and cryotrap</p> <p>Software and instrument mods for full automation</p> <p>New lower pressure drop sample trap design</p>	15%	ACD	\$ 5.90	12,105		
<p>Rebecca Hornbrook, 749725 Deployment Funds</p> <p>Improve chromatogram by varying temperature ramps, etc.</p> <p>Investigate sub-ambient control of T1, the initial temperature of the GC which is an important parameter in determining the retention time reproducibility</p> <p>Investigate replacing bellows pump with a lighter, more powerful pump</p> <p>Reduce run times from 120 seconds to 90 seconds by a series of lab experiments and parameter changes.</p>	45%	ACD	\$ 5.90	29,181		
TOTAL Salaries				12,105	29,181	
Regular Benefits @	0.532			6,440	15,524	
SUBTOTAL Modified Total Direct Costs (MTDC)				<u>18,545</u>	<u>44,705</u>	
NCAR INDIRECT COSTS (IC) @	0.543			10,070	24,275	
MTDC Items that include IC						
COMPUTING SERVICE CENTER	\$5.90			1,583	4,749	
TOTAL Project Cost				30,198	73,729	103,927