## Customer Breakout Session II: 8:50-10:00 AM, Wednesday, September 19, 2007

| Group:       | Conversion and Co-Products (3) |
|--------------|--------------------------------|
| Facilitator: | Kevin Hicks                    |
| Recorder:    | Chavonda Jacobs-Young          |
| Presenter:   | Steve Lewis                    |

## For your Component, what should be the Sub-Components? Please make Sub-Components clear, concise and unambiguous

| Recommended Sub-Components (in priority)                              | Relative<br>Weight |
|---|--------------------|
| Improved Utilization of Co-Products - All fuel types                  |                    |
| Better Catalysts – Biochemical, Microbiological, Chemical – All Fuels |                    |
| Better Pretreatment Technologies- Alcohol Fuels and                   |                    |
| Thermochemical Fuels  |                    |
| Ability to Handle Feedstock Variability – All Fuels                   |                    |
| Integrated Process Technologies – All Fuels                           |                    |
| Process Economics, Scalability, and Life Cycle Analysis – All Fuels   |                    |
| Improved Titer of Alcohol – Cellulosic based Alcohol Fuels            |                    |
| Fuel Properties, Performance and Quality Specifications – Biodiesel   |                    |
| and Thermochemically derived fuels                                    |                    |

For each sub-component, recommend research partnerships that ARS should continue or explore with external institutions (e.g., other Federal agencies, universities, National Labs, and/or industry) – please record on flipcharts

| Recommended Partnerships  |  |  |
|---|--|--|
| Improved Utilization of Co-Products - All fuel types                  |  |  |
| FDA, AAFCO, ASTM, Interagency collaborations, Academia                |  |  |
| Better Pretreatment Technologies- Alcohol Fuels and                   |  |  |
| Thermochemical Fuels  |  |  |
| DOE, EPA, Interagency collaborations, Academia                        |  |  |
| Better Catalysts – Biochemical, Microbiological, Chemical – All Fuels |  |  |
| DOE, Academia, Industry, Interagency collaborations                   |  |  |
| Integrated Process Technologies – All Fuels                           |  |  |
| Industry, DOE, Interagency collaborations, Academia                   |  |  |
| Process Economics, Scalability, and Life Cycle Analysis – All Fuels   |  |  |
| ERS, Academia, Office of Energy Policy and New Uses, DOE              |  |  |
| Ability to Handle Feedstock Variability – All Fuels                   |  |  |
| Academia, Industry  |  |  |
| Improved Titer of Alcohol – Cellulosic based Alcohol Fuels            |  |  |
| DOE, Interagency collaborations, Academia, Industry                   |  |  |
| Fuel Properties, Performance and Quality Specifications – Biodiesel   |  |  |
| and Thermochemically derived fuels                                    |  |  |
| EPA, DOT, DOE, Academia, ASTM, NIST                                   |  |  |