**SPECIFIC AIMS** Gestational diabetes mellitus (GDM) occurs in up to 18% of all pregnancies in the United States.[1] American Indian and Alaska Native (AI/AN) women[2] are disproportionately affected by GDM, nearly twice the U.S. rate.[4] Not only is GDM a significant risk factor for developing type 2 diabetes (T2D),[1, 7] but it also is a risk to future generations because intrauterine exposure to maternal diabetes places the fetus at increased risk of congenital defects, perinatal death, and future onset of diabetes.[8-10] Moreover, due to health care disparities (e.g., limited resources, lack of cultural sensitive programs), AI/AN women will continue to have a significantly increased risk for developing GDM;[11-16] which perpetuates a vicious cycle of diabetes in the next generation.[8] Furthermore, because the incidence of GDM is rising among American adolescents,.[7] AI/AN youth have higher risk for developing diabetes, diabetes-related complications, and have more risk factors for GDM[11-16, 18](i.e., metabolic syndrome or pre-diabetes or BMI> 85%).[19-20] Similar to other American teens, some AI/AN teens participate in early and unprotected sexual practices,[21-22] thus increasing their risk for unplanned pregnancies, GDM and complications.[23-24] The need for a GDM preventive intervention for youth in this population is compelling.

Because GDM is a strong indicator for high risk in subsequent pregnancies,[25] preventing GDM in a woman’s first pregnancy is imperative. Preconception counseling (PC) has significantly reduced perinatal complications in women with diabetes.[24] Currently, we have the only validated PC program that targets teens [READY-Girls (RG) for diabetes].We found that as grown women, those who received PC at an early age were more vigilant with family planning.We plan to adapt this program for GDM. For a **significant** and **innovative** shift in paradigm, we are proposing a culturally sensitive PC intervention to enhance both lifestyle behaviors and family planning vigilance as a primary prevention for GDM in AI/AN adolescent females who are at risk for GDM. Thus women can optimize their metabolic health by adopting a healthy lifestyle PRIOR to pregnancy to prevent GDM. We will target girls starting at the age of 12 to coincide with both the American Diabetes Association’s (ADA) [26] recommendation that PC should start at puberty, and the “Coming-of-Age” rituals for pubescent girls celebrated within many AI/AN communities to empower young women.[2] Our approach comprises 3 elements common to these rituals which are passed down between generations of women: food and physical activity (lifestyle), and instruction.[2] We will provide mothers with PC knowledge and communication skills to weave cultural influences into their communications with their daughters about reproductive health. In response to PAR-11-346 “Interventions for Health Promotion and Disease Prevention in Native American Populations” we **propose** to use a sequential mixed-method design with a multi-tribal AI/AN community-based participatory research (CBPR) approach to adapt and test a culturally appropriate PC theory-based intervention called STOP-GDM for AI/AN female adolescents 12 to <20yrs at risk for GDM; directed at the individual, familial and institutional levels simultaneously. AI/AN community-researcher partnerships have been established. An RCT with a 15mos follow-up will test the effects of receiving online STOP-GDM on mother-daughter (M-D) cognitive/psychosocial and behavioral outcomes, and daughter family planning vigilance. During the broad dissemination phase, the final online STOP-GDM program will be provided at no cost to the Indian Health Service (IHS), providing health care to over 2 million AI/AN. Health care providers (HCP)(e.g., nurse) at each clinical facility will be given free access to a continuing education program for PC training. This proposal provides a unique opportunity to **impact** allIHS AI/AN female teens at risk for GDM, and potentially help to prevent them and their future children from developing T2D. **Our Primary Aims are as follows:**

**Phase 1** - Adapt online READY-Girls into STOP-GDM Intervention (focus groups in 1a, 1b; also interviews in 1b)

**1b.** Identify HCP recommendations about their experiences caring for AI/AN female teens at risk for GDM and

diabetes, women with GDM, providing PC; and feedback from tribal health boards and tribal leaders about PC.

**1c.** Adapt the intervention to be culturally/developmentally tailored for PC GDM based on 1a, 1b. Conduct a pilot feasibility study to explore acceptability/satisfaction. Iterations will be made until satisfaction is achieved.

**Phase 2** - Evaluate effectiveness of the Intervention in AI/AN female teens at risk for GDM:

**1a.** Explore the understanding of GDM (risk/prevention) in AI/AN teens at risk for GDM and their mothers

**2a.** Test the efficacy of receiving STOP-GDM in daughters (D) and their mothers (M) on *M-D intermediate outcomes*: GDM and reproductive health knowledge, beliefs, M-D communication, social support, intention/ actual initiating M-D discussions about reproductive health, andlifestyle self-management.

**2b.** Test the efficacy of receiving STOP-GDM on *long-range outcomes* in daughters: intentions/ actual family planning vigilance behavior (using effective family planning/abstinence, delaying sexual debut, seeking PC, and initiating discussion with HCP). **2c.** Determine usage and satisfaction with STOP-GDM.

**Phase 3** – Disseminate the Intervention through IHS by adoption, implementation, and sustainability:

*Monitor* *Uptake* by tracking HCP at each IHS service unit who: **3a.** complete an online PC continuing education (CNE); and **3b.** provide STOP-GDM and PC to their female adolescent patients at risk for GDM and track the number of patients who receive it. *Evaluate*: **3c.** CNE training **3d.** STOP-GDM.

**Secondary Aim:** Explore the treatment effects on BMI percentile, A1C, and pregnancies/GDM prevented