

从大学到社区：美国田纳西大学花园园艺疗法项目实践

Connecting Horticultural Therapy to the Community Through Universities and University Botanic Gardens

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摘 要
园艺疗法作为一种促进健康和福祉的有效疗法，日益得到全世界的认可，而大学校园则是一个实施园艺疗法项目的绝佳场所。作为赠地大学的一员，美国田纳西大学具备良好的开展园艺疗法的基础。以田纳西大学花园（UTG）园艺疗法项目为例，从教育培训、科学研究和技术推广三个方面，详细阐述UTG园艺疗法项目的发展历程和具体开展环节，以及园艺疗法与大学校园和社区公园共建的重要性。此外，还讨论了UTG园艺疗法项目未来的发展计划，为其他大学校园、社区公园开展园艺疗法事业进而促进人们健康与福祉提供借鉴。

关键词
园艺疗法；大学校园；项目实践；健康福祉；美国田纳西大学

Abstract
Horticultural therapy is gaining acceptance worldwide as an effective treatment to help improve health and well-being. Therefore, universities provide an ideal backdrop for developing and implementing horticultural therapy programming. As a member of the Land Grant Universities, the University of Tennessee has a good foundation for horticultural therapy. Taking the University of Tennessee Gardens (UTG) horticultural therapy program as an example, we elaborated on the development and specific aspects of the UTG horticultural therapy program from three parts: education and training, scientific research, and technology promotion, as well as the importance of horticultural therapy in collaboration with university campuses and community parks. In addition, plans for the UTG horticultural therapy program were discussed to provide a model for other university campuses and community parks to develop horticultural therapy businesses and thereby promote the health and well-being of people.

Keywords
horticultural therapy; university campus; program practice; health and well-being; University of Tennessee

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园艺作为一种促进身心健康的疗愈活动，在人类发展进程中一直存在。美国园艺疗法事业在1973年拥有了正式的专业协会——美国园艺疗法协会（American Horticultural Therapy Association, AHTA），协会的使命是“促进和推广园艺疗法作为一种治疗干预和恢复健康的方法”^[1]。园艺疗法也逐渐被全世界所接受^[2-5]，其可以改善身体机能，减少抑郁、焦虑和压力，促进社会交往，增加职业技能，提升营养健康水平等，从而增进不同需求人群的健康和福祉^[6]。近年来，随着健康事业的不断发展，园

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艺疗法的使用场景逐渐从医院、精神病院等专业性卫生医疗机构,拓展到大学校园、社区等日常环境中。文章详细介绍了美国田纳西大学花园 (University of Tennessee Gardens, UTG) 园艺疗法项目,旨在强调园艺疗法引入大学校园的优势与重要性,并为其他大学校园、社区公园开展园艺疗法项目提供借鉴。

1 园艺疗法的概念内涵

多年来,美国和世界各国的该领域从业者对园艺疗法 (horticultural therapy) 进行了定义。Haller将园艺疗法定义为“一种专业的以客户为中心的治疗方式,通过园艺活动达到特定的治疗或康复目标”;Son等将园艺疗法定义为“以恢复病人的社会、情感、心理、身体和认知能力为目的的补充医学。接受过园艺和临床培训的治疗师,通过使用植物素材的园艺活动执行预定的治疗方案,获得可量化分析的结果,并对治疗结果进行科学评估”^[7]。AHTA目前将园艺疗法定义为“参加由注册园艺治疗师 (Horticultural Therapist Registered, HTR) 协助的园艺活动,以实现既定的治疗、康复或职业计划目标”^[8]。尽管世界各地对园艺疗法有多种定义,但相似之处在于,其必须包括训练有素的园艺治疗师、人与植物的互动,具有明确的以恢复健康或以保健为目的的治疗目标,这些是园艺疗法的重要组成要素。

在美国使用的另一个常见术语是治疗性园艺 (therapeutic horticulture)。治疗性园艺是由相关专业人员主导的园艺活动,他们需接受过使用园艺作为治疗方式来支持既定目标的培训”^[8]。园艺疗法和治疗性园艺之间的主要区别在于,园艺疗法需由HTR来主持。在美国,与医疗保健等人类健康相关的职业,从业人员必须严格执行行业标准并进行专业培训,应以确保患者或客户的安全作为一切工作开

展的前提。园艺治疗意味着其作为医疗模式的一部分,治疗师应该获得基本的职业资质,才能开展与健康相关的医疗活动。HTR认证是目前美国园艺治疗师执业的首选证书。要想成为一名HTR,必须拥有至少学士学位,完成在人类科学、植物科学和园艺疗法方面的课程,以及在HTR监督下参加480h的实习^[9]。

2 UTG简介

田纳西大学成立于1794年,是美国赠地大学的一员,原名布朗特学院 (Blount College)。经过两次更名,于1879年正式定名为田纳西大学。美国赠地大学 (Land Grant Universities),是在1862年的莫里尔法案推动下逐渐建立起来的。该法案最初为教育机构提供了超过405万hm²的土地,向任何有学习欲望的人教授农业和机械艺术,而不仅仅是为富人^[10]。1887年,美国国会为农业技术研究项目设立了基金。1914年的《史密斯—利弗法案》提供资助建立技术合作推广办事处,并向每个州的几乎每个县都派遣了专业人员,为农民和家庭提供支持^[11]。

UTG由观赏园艺系和景观设计系于1983年在田纳西大学诺克斯维尔农业实验站建立,是东田纳西州地区唯一的园艺设施。田纳西大学花园的使命是“通过园艺展示、自然教育和科学研究,激发和培养人们对植物的喜爱”。1989年,UTG扩展到田纳西州的杰克逊市,2013年,扩展到田纳西州克罗斯维尔市,该园随后被田纳西州政府认定为州立植物园。如今,诺克斯维尔的UTG已经从0.1hm²扩大到近4hm²的规模。每年有超过10万名游客享受UTG的美景、教育机会、野餐环境和宁静的氛围。

UTG有丰富的植物资源,被用来测试来自世界各地的植物材料在田纳西州景观中的

适用性和适应性。国家花卉评估项目,包括全美花卉选择和欧洲花卉选择试验等都会花园中进行,UTG还从美国国家植物园引进乔灌木品种。目前,UTG已拥有2300多种不同类型的植物,包括乔木、灌木、一年生植物、多年生植物、草本植物、观赏草、藤本植物、地被和水生植物,是该地区家庭园艺、商业苗圃和景观设计师的宝贵资源。

UTG还用于教学、课程实习以及科研项目等,是重要的教学基地。作为室外学习教室和创新实验室,学生和游客可以在这里学习景观营造、地面维护、景观设计以及植物识别与应用。花园内的湿地、玉簪园和草本花园,都是田纳西大学“创新类研究项目”的实验基地和教研成果,在这个项目中,学生负责花园设计和方案实施,获得宝贵的实践经验。UTG同样也支持田纳西大学其他学科的教育与科研任务,包括林学、教育学、音乐学、艺术学等,同时也为当地居民提供花园研讨会、园艺课程、夏令营和园艺治疗项目。丰富的植物资源、多样的教育实践使得UTG的使用者与自然建立了紧密且友好的联系,配合相应的资金支持 (UTG的经济来源主要包括项目经费以及捐赠、赞助和筹款等),UTG园艺疗法项目具备良好的开展基础。

3 UTG园艺疗法项目

3.1 项目概述

UTG的系列疗愈项目始于2009年。2012年,UTG用获得的资金设立园艺教育工作者的职位,由Stowell博士指导。至今,该教育计划已扩大到包括9~10周的夏令营、专题讨论会、全年花园讲习班、儿童疗愈项目、园艺科普和园艺治疗项目等。项目的启动资金源于外界资助,并通过项目的运营收入,使疗愈项目能够自我维持。自2012年开始,学

校为大力推动UTG项目的发展,投入了更多的资金支持,包括一次性提供5年的运营经费,用于扩大UTG项目的规模。此后,夏令营的日间活动被扩大为整周的营会,增加花园座谈会,并启动项目的对外宣传工作、扩大影响力,从而吸纳更多的社区成员参与到项目中来。

2012年,美国注册康乐治疗专家(Certified Therapeutic Recreation Specialist, CTRS)的一位花园教育家完成了园艺治疗相关知识的学习,并致力于开发园艺治疗项目。这个项目发展的关键是,让园艺教育工作者通过AHTA获得HTR的专业注册。通过完成园艺和园艺治疗等相关课程学习,这位园艺教育家于2015年获得HTR注册认证。园艺治疗项目的重点服务人群是医疗设施不够完备的社区内居民,以协助改善居民的健康福祉,这也非常符合赠地大学在教育、科学研究和技术推广方面的发展理念。

下文将进一步讨论UTG在这三个方面的具体做法,为其他大学或大学花园的园艺治疗项目发展提供借鉴参考。

3.2 UTG 园艺疗法与教育培训

园艺疗法教育培训主要依托田纳西大学课程、专业实习、参加学术会议等,目标是传授给大学生园艺治疗方面的知识、分享学术研究和实践经验,通过开展系统的园艺治疗理论学习和实践技能的培训,使大学生成为未来优秀的园艺疗法从业者。

3.2.1 园艺治疗师注册认证

田纳西大学于2022年推出园艺疗法注册认证项目,这是田纳西大学推出的首个本科阶段即可获得的职业注册认证项目,学生必须至少拥有相关学科的学士学位(包括在

读本科生),才有资格参加这个注册认证项目。完成该项目需研修三门课程:园艺疗法概论、园艺疗法项目规划与技术、园艺疗法项目管理。每门课程3学分,共9学分,并鼓励学生注册园艺治疗师。同时开设在线学习课程,面向全美有专业和注册需求的学生开放。

该项目的启动源于2018年,田纳西大学赫伯特农学院(Herbert College of Agriculture)植物科学系主任就该项目开展的必要性和发展计划参与了初步讨论,并对园艺疗法的专业性、社会需求以及注册认证项目的市场分析等做了深入探讨。在学院院长和教职员工的有力支持下,该项目于2020年获得田纳西大学教职员工议会的最终批准,并正式向AHTA申请园艺治疗师注册认证资格,以确保该项目符合国家认可的标准。2021年秋季,该项目获得SACSCOC(Southern Association of Colleges and Schools and Commission on Colleges)的批准(任何新开设的注册认证课程,都要作为重大调整申请SACSCOC的批准)。2021年秋季获得最

终批准后,田纳西大学园艺治疗师注册认证项目开始运行。第一期认证学习于2022年1月正式启动,并于2022年8月完成,第二期认证学习将于2023年1月启动。

3.2.2 注册认证的实习环节

实习是医疗保健专业培训的一个重要环节^[12],确保从业人员的临床决策能力^[13]。AHTA注册园艺治疗师的实习时长为480 h,需要在HTR的全程监督和指导下的完成^[14]。在制定实习计划时,重要的是实习目标和流程的确立,最终目标是培养未来的专业人才,而非实习机构的廉价劳动力。对于实习生的背景调查、推荐信调查和面试等筛选也应一并开展^[15]。表1列出了一个成功的实习计划应包含的各个环节。

3.2.3 注册认证的提案与演讲环节

提案与专业演讲是美国高等教育的重要组成部分,在过去的10年中,UTG的工作人员在国际的许多区域性和全国性会议上

表1 美国HTR实习计划与工作环节
Tab. 1 American HTR internship program and work procedures

环节 Procedure	描述 Description
任务导向	培训开始后,应向实习生详细介绍该职业认证的政策和程序
目标设定	与实习生共同设定实习目标
团队介绍	引介负责全程指导的HTR将如何领导和管理园艺治疗项目
全程融入	安排实习生全程融入到园艺治疗过程中,为实习生提供机会观察和学习,并随着实习的深入,为实习生提供独立承担、实践治疗过程的机会
中期评估	实习中期评估实习生的表现,为改进提供反馈和建议
实习文件	提示实习生按照园艺治疗师注册指南准备相关文件
特殊项目	确保实习生完成注册要求的长期或短期园艺治疗项目、案例研究或实习经验所需的其他特殊项目
专业认证过程	提示实习生知悉详细的专业认证程序,这将非常有助于其获得HTR、CTRS或其他医疗保健职业注册认证
就业与职业发展	与实习生讨论就业、未来计划和职业发展的价值,包括加盟专业协会等
终期评价	在实习结束时,对实习生的表现进行全面评估,并为改进提供反馈和建议

做过演讲。提案与专业演讲主要有以下训练目的: (1) 分享注册申请人在园艺疗法研究或实践所学到的知识; (2) 与其他相关学科的医疗保健专业人员分享园艺疗法的好处; (3) 获得AHTA的认证学分, 以保持职业认证资格; (4) 丰富个人简历, 作为一名教职员工或在申请新的就业机会时, 这一点可能很重要。

3.3 UTG 园艺疗法与科学研究

园艺疗法需要开展循证研究, 以帮助记录干预措施的有效性。与田纳西大学建立学术联系, 是UTG园艺治疗项目的宝贵资产和优势, 高校平台为UTG提供了与一线科研工作者开展合作的机会, 同时也吸引很多本科生、研究生的加盟, 这些非常有助于推进该领域的学术研究。

2017年, UTG获得了一笔赠款, 用于支持创建以服务退伍军人为重点的园艺疗法项目。项目成员首先针对芝加哥植物园和Tamar 如何促进其以退伍军人为重点的园艺治疗方案进行系统梳理, 并进行两次实地调研和循证数据采集, 研究证明园艺疗法对于疗愈退伍军人身心具有多方面益处^[16]。该项目获得得克萨斯大学伦理审查委员会的批准, 并对项目的顺利开展给予很多支持。此外, UTG还参与了田纳西州农业能力研究项目, 针对退伍军人园艺疗法的循证实践进行分享和研讨^[17]。2022年UTG启动了一个关于健康影响计划项目的申请, 重点是园艺疗法与生态健康的循证研究。这个项目由田纳西大学心理学系研究生团队开发。

3.4 UTG 园艺疗法与技术推广

技术推广与外联工作为UTG园艺治疗项目的科研人员提供了很多成果转化的机会, 能

够让研究成果落地、服务社区, 是增进高校资源与社区联系的纽带。UTG用于外联的经费主要来自政府或学校的拨款、项目经费和募捐资助等渠道。由此可见, 田纳西州政府和田纳西大学都很重视UTG的园艺治疗项目, 也充分印证了该项目的确能为当地居民提供有力的健康支持。UTG近年来三个重要的外联工作如下。

3.4.1 “移动花园” 计划

2012年, UTG开始为当地的生活辅助性养老机构 (assisted living facilities) 提供园艺治疗服务, 这些机构专门为老年人提供日常生活服务、医疗管理服务等^[18]。最初, 这些养老机构会组织老年人来到UTG花园参与园艺治疗。经过初步评估发现, 这种模式受制于时间不足、服务人员数量不足、资源有限等问题, 前往UTG参与治疗具有很大的挑战性, 也影响疗愈效果。随后, 工作人员创新提出了“移动花园” 计划 (Mobile Garden Program), 使得UTG园艺治疗能够覆盖整个田纳西东部地区的更多养老机构。

移动花园计划为实现园艺治疗目标提供了有力支持, 项目工作人员与养老机构的活动负责人联系, 根据客户身体情况制定治疗方案, 并鼓励这些养老机构增设或者完善园艺治疗设施, 例如增设无障碍种植床、添置适合老年人等特殊人群使用的园艺工具等。经活动后评价, 参与移动花园计划的老年人, 在社会互动与人际交往能力、维持或改善肌肉功能、手的灵活稳定等精细运动技能都有明显提升, 同时也掌握了更多的园艺知识和技巧。UTG“移动花园” 还与其他组织开展合作, 例如为痴呆症或阿尔茨海默氏症的病人提供记忆护理服务, 自2020年开始为特殊教育机构提供园艺治疗服务等。


3.4.2 特殊人群职业培训

针对特殊人群的职业培训一直是园艺疗法领域关注的重点^[19], Melwood是为特殊人群开发园艺治疗项目的领导者之一^[20]。AHTA与美国各地多个组织合作开展了“雇用残障人士的园艺” (Horticulture Hiring People with Disabilities, HHPD) 项目, 侧重于残疾人的职业培训^[21]。时至今日, 虽然对AHTA来说这一项目的资助已经结束, 但全美各地利用园艺为残疾人提供职业培训仍然方兴未艾。近年来, UTG与田纳西州聋哑学校合作, 为在校高中生开设成人综合课程。该课程既传授温室、公共花园的园艺技能, 又将对园艺技能的培养与职业技能联系起来, 为日后胜任园艺工作打下良好基础。UTG还与“田纳西大学FUTURE” 项目合作, 为有智力和发育障碍的成年人提供园艺治疗服务。FUTURE项目致力于安排在校生成获得实习机会、提升工作技能, 其工作重点是帮助学生获得就业机会^[22]。

3.4.3 社区居民康复服务

2021年开始, UTG获得了一个与加勒比社区康复服务网络 (Caribbean Community Based Rehabilitation Network, CCBRN) 合作的机会, 该项目是美国国际开发署 (United States Agency on International Development, USAID) 和美洲农民互助计划 (Americas Farmer to Farmer Program, AFFP) 之间的一个合作项目, 致力于将UTG的园艺治疗服务引入到加勒比社区。为了确定引入园艺疗法对于该社区的康复项目而言, 是否是有价值的补充, UTG项目成员首先进行了详细的需求评估。积极的评估结果肯定了CCBRN对于园艺疗法康复项目的兴趣和意愿。至今, UTG一直与CCBRN开展很好的合作, 先后制定并实施了多个园艺治疗项目, 同时也积极开展园艺疗法项目的职业培训。

4 结论与讨论

自2012年创建以来，UTG的园艺治疗项目已为8 495名参与者、2 508名医疗保健从业者、17名康乐治疗实习生和5名园艺疗法实习生提供服务。该项目具备较好的发展前景，未来的发展重点是探索研究和实践相融合。在大学或城市公园开展园艺治疗项目，最重要的就是合作，包括与社区合作，从而实现共同的健康服务目标；与田纳西大学等高校的研究人员合作，从而为开展园艺疗法的科研工作提供了有力支持。通过与高校平台开展循证研究，UTG园艺疗法项目探索了园艺疗法的健康干预价值，这将有助于园艺疗法的推广普及，从而更好地服务大众。 

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Introduction

The use of horticulture as a therapeutic tool has been seen throughout history. Observations about the positive benefits of being in nature, around plants, cultivating plants, and growing gardens helped to advance the study and practice of horticulture as therapy. The formal organization of the profession of horticultural therapy began in the United States in 1973 with the establishment of a professional association that is now called the American Horticultural Therapy

Association (AHTA). The AHTA's mission is to “promote and advance the profession of horticultural therapy as a therapeutic intervention and rehabilitative modality”^[1]. The use of horticulture as therapy is also accepted throughout the world^[2-5]. Horticultural therapy has been shown to improve the health and well-being of many populations. Some of the benefits of horticultural therapy include improved physical ability, reduced depression, anxiety, and stress, improved social interaction, increased vocational skills, improved

nutrition, and much more^[6].

Horticultural Therapy Defined

Horticultural therapy has been defined by numerous practitioners in the United States and throughout the world over the years. Haller defines horticultural therapy as “a professionally conducted client-centered treatment modality that utilizes horticulture activities to meet specific therapeutic or rehabilitative goals of its participants.” In 2016, Son

et al. defined horticultural therapy as “complementary medicine with the purpose of rehabilitating the social, emotional, psychological, physical, and cognitive ability of clients. To this end, a therapist who received both horticultural and clinical training conducts the intended program to diagnosed clients through horticultural activities using living plants in order to obtain measurable goals, after which the results are scientifically assessed” (p. 86)^[7]. The AHTA^[8] currently defines horticultural therapy as “the participation in horticultural activities facilitated by a registered horticultural therapist to achieve specific goals within an established treatment, rehabilitation, or vocational plan.” Although there are several definitions of horticultural therapy throughout the world, the similarities are that it must include a trained therapist, plant interactions, and an individual with an identified health or wellness goal/need.

Another term utilized in the United States that has at times been used interchangeably is therapeutic horticulture. Therapeutic horticulture is “the participation in horticultural activities facilitated by a registered horticultural therapist or other professionals with training in the use of horticulture as a therapeutic modality to support program goals”^[8]. The main difference between horticultural therapy and therapeutic horticulture in the United States is in the qualifications of who can conduct horticultural therapy. Therapy implies that it is part of the medical model of care and a therapist should meet basic qualifications to practice therapy. In the United States horticultural therapists currently have the designation of Horticultural Therapist-Registered (HTR). The HTR designation is currently the preferred credential for practicing horticultural therapist in the United States. To become an HTR, one must have a minimum of a bachelor's degree with coursework in human science, plant science, and horticultural therapy, as well as participation in a 480-hour internship supervised by

an HTR. Healthcare professions must have a set of standards, and professional training to ensure patient safety is top priority.

Land Grant Universities

The United States has a unique system of publicly funded universities to support education, research, and outreach. These universities were founded through the adoption of the Morrill Act of 1862. The Morrill Act was passed in 1862 and provided over 10 million acres to educational institutions to teach agriculture and mechanical arts to anyone with a desire to learn, not just the wealthy (United States National Archives, 2022). The University of Tennessee began as Blount College in 1794. Two name changes later (East Tennessee University), the University of Tennessee was formed in 1879^[10]. In 1887, the United States Congress created funding for various agricultural functions. Agricultural experiment stations and veterinary research were funded at that time. The Smith-Lever Act of 1914 provided funding to establish cooperative extension offices. Extension offices were established and extension agents were dispatched to nearly every county in every state to provide support for farmers and families^[11].

The current Institute of Agriculture at the University of Tennessee began in 1968 when three units operating in the University System structure were integrated. Combining units were the College of Agriculture, the Agricultural Experiment Station, and the University of Tennessee Extension service. This combination furthered the university's land-grant mission for outreach, education, and research^[9].

University of Tennessee Gardens (UTG)

The UTG were established by the Department of Ornamental Horticulture and Landscape Design (OHLD) in 1983, at the University of Tennessee, Knoxville, Agricultural Experiment Station. The UTG, Knoxville

location have expanded from a quarter acre to their present size of nearly ten acres. The UTG are the only horticultural/botanical facility of its kind in the East Tennessee region and has over 100 000 visitors a year who enjoy the beauty, educational opportunities, picnic facilities, and serene atmosphere of the UTG.

The UTG are used to test the suitability and adaptability of plant materials from all over the world for use in Tennessee landscapes. National flower evaluation programs including the All-American Selections and European Fleuroselect trials are conducted at the Gardens, which also hosts tree and shrub introductions from the National Arboretum. With more than 2 300 different types of plants, including trees, shrubs, annuals, perennials, herbs, ornamental grasses, vines, groundcovers, and aquatic plants, the UTG are a valuable resource for the region's home gardeners, commercial growers, and landscapers.

In addition to providing plant performance information to the gardening industry, the Gardens are used for teaching, student internships, and student projects. They are an essential tool for education, serving as an outdoor classroom and laboratory where university students and visitors can learn about landscape construction, grounds maintenance, landscape design, and plant identification and usage. Students gain valuable hands-on experience through class work and projects. Some garden areas, such as the wetland, the hosta garden, and the herb garden, are the products of “special problems” projects, in which a student takes responsibility for the design and implementation of a large garden project in exchange for class credit.

Support for the UTG is provided through a variety of sources including donations, program fees, sponsorships, grants, and fundraising events. The mission of the UTG is “to inspire, educate, and cultivate an appreciation of plants through horticultural displays,

educational programs, and research." The UTG expanded to its Jackson, Tennessee location in 1989. The UTG expanded to a third location in Crossville, TN in 2013. The Gardens was recognized by the State of Tennessee in 2013 as the official botanical gardens of the state.

The UTG fulfills the Land Grant mission through education, research, and outreach. The education program offers workshops, classes, summer camps, and horticultural therapy programming to the broader community. The UTG also is a living laboratory for University of Tennessee students from many disciplines including plant science, forestry, education, music, art, and much more. The UTG conducts plant trial research as well as research related to the people-plant connection and horticultural therapy.

Education at the UTG began when volunteers led workshops on various horticulture topics. In 2009, UTG received funding to support the creation of a garden educator position and the current education program has been directed by Dr. Stowell since 2012. Since that time, the education program has expanded to include 9~10 weeks of summer camp, symposia, year-round garden workshops and horticultural therapy programming.

Program Development

The current education and horticultural therapy program of the UTG began in 2009 and included children's programming and garden workshops. The garden educator position was funded through a grant, with the goal of bringing in revenue to allow the education program to become self-sustaining. In 2012 a new garden educator was hired and funded through a five-year grant. A new strategic direction was initiated in 2012 to include expansion of the education program. The summer camp day programs were expanded to full week camp sessions, garden symposia were added and other outreach efforts were

established to reach more community members in East Tennessee. In 2012 the garden educator, who was at the time a Certified Therapeutic Recreation Specialist (CTRS), learned about horticultural therapy and began developing the horticultural therapy programming. The critical element of this program development was to have the garden educator obtain professional registration as an HTR through the American Horticultural Therapy Association. With additional coursework in horticulture and horticultural therapy, the garden educator obtained HTR status in 2015. The focus of the horticultural therapy program was to connect the UTG with underserved populations in the community to assist with improving overall health and wellbeing. The horticultural therapy programming meets the land grant mission of education, research and outreach. Each of these three elements will now be discussed to provide a model for horticultural therapy program development at other universities or university gardens.

Education

The education component of the horticultural therapy program focusses on professional education. This type of education takes place in college level classes, professional internships, and through presentations at professional conferences. Each element of this component helps to increase knowledge of the profession and practice of horticultural therapy, share research and program experience, and train college students to become horticultural therapy practitioners.

Horticultural Therapy Certificate

The University of Tennessee launched a horticultural therapy certificate program in 2022. The horticultural therapy certificate program is the first undergraduate certificate offered at the University of Tennessee. This program was designed as an online

accelerated program. The goals of the program are to educate students about horticultural therapy and teach them about professional registration, the history of the profession, and how to design and implement horticultural therapy programs. For a student to be eligible for this program, they must have a minimum of a bachelor's degree. The program consists of three college courses: Introduction to Horticultural Therapy, Horticultural Therapy Programming and Techniques, and Horticultural Therapy Program Management. Each course provides three semester credits for a total of nine semester credits. The program was developed as an online certificate to accommodate students from around the United States who are not able to relocate to Knoxville to attend.

The certificate program was developed over the course of several years. In 2018, initial discussions with the Department Head for the Department of Plant Sciences in the Herbert College of Agriculture about the need for the program and steps to move forward were identified. The Herbert College of Agriculture is a college of the University of Tennessee and houses the Department of Plant Sciences. The next step was the creation of a proposal to the University to highlight the profession of horticultural therapy, the need for educational programs in horticultural therapy, and a market analysis of creation of the certificate program. After a full proposal was developed, the Department Head for the Department of Plant Sciences at the Herbert College of Agriculture submitted the proposal to the Assistant Dean of the Herbert College of Agriculture. After approval of the Assistant Dean, the program was presented to the faculty of the Department of Plant Sciences in the fall of 2020. The faculty voted to approve the certificate program and a full application for the creation of the certificate went on to the University of Tennessee faculty senate. After final approvals of the certificate program from the university were obtained, the horticultural therapy

program staff began the application for accreditation of the certificate program from the American Horticultural Therapy Association. Accreditation is an important aspect of the creation of education programs to ensure that they meet nationally recognized standards in program content. The University of Tennessee is also accredited by the Southern Association of Colleges and Schools and Commission on Colleges (SACSCOC). A new rule voted in 2020, required any new certificate program to apply for approval by SACSCOC as a significant change. Approval by SACSCOC was obtained in the fall of 2021. After final approval was obtained in the fall of 2021, the horticultural therapy certificate program began accepting applications. The first cohort was launched in January of 2022 and completed in August of 2022. The second cohort will be launched in January of 2023.

Internships

Internships are a valuable element of healthcare professional training^[12]. Internships can help improve clinical decision making for healthcare professionals^[13]. An internship is a field placement of an entry-level professional that is supervised by a credentialed healthcare professional^[14]. Internship requirements vary by profession. The internship requirements for the AHTA professional registration process currently requires a 480-hour internship supervised by an HTR. The program at the UTG also accepts interns from other disciplines. One major source of interns is students studying therapeutic recreation. These students are seeking out field experience to be eligible for professional certification with the National Council for Therapeutic Recreation Certification^[15]. The therapeutic recreation interns are required to conduct a 560-hour internship.

Interns can be paid, unpaid or volunteer. When developing an internship program, it is important to note that the goals of the internship are to help train

future professionals. The focus should not be free or cheap labor. A successful internship experience requires a high level of work and supervision by the healthcare professional. When designing internships consider what elements you intend to include. Planning prior to accepting your first interns is helpful. The first stage of planning is to determine the goals of your internship program. Next, work with your program administration to determine what the application process should look like. This should also include screening such as background checks, reference checks, and an interview of the potential intern. Once your program has begun and you are accepting interns, one of the first tasks is orientation. This process should include initial training, teaching the intern your program policies and procedures, and working with the intern to set up the schedule and

discuss their goals. The following table suggests the stages or elements to include in a successful internship program.

Professional Presentations

Professional presentations are an important part of education. A professional presentation can take the form of teaching a session at a professional conference or symposium in person or virtually.

There are five main functions of professional presentations:

- (1) The first function is to share what horticultural therapy professionals have learned through research, or practice.
- (2) A second function is to share the benefits of horticultural therapy to other allied healthcare professions.

Tab. 1 American HTR internship program and work procedures

Task	Description
Orientation	Initial training to focus on organizational policies and procedures, and other organizational management strategies
Goal Setting	Working with interns to set their personal goals for the internship experience
Group Introduction	When the intern begins observing horticultural therapy sessions. To help see how the supervising therapist leads and manages programs and treatment
Connection to the horticultural therapy treatment process (Haller and Capra, 2017)	Connect the intern to the horticultural therapy treatment process and expose them to all the elements. Provide opportunities for interns to observe each stage of the process. As the internship progresses, provide opportunities for interns to take on and practice each stage of the treatment process
Mid-term evaluation	Provide a time to evaluate the intern on their performance mid-way during the internship experience. Provide feedback and suggestions for improvement
Internship documentation	Throughout the internship, offer time to encourage documentation that follows the internship guidelines for professional registration
Special projects	Ensure that the intern completes any long or short-term projects, case studies, or other projects required for the internship experience
Professional credentialing process	Take time to review the professional credentialing process. This will depend on if they are working towards HTR, CTRS or another healthcare credential
Job and professional development	Take time to discuss careers, future plans, and value of professional development, including participation in professional associations
End-of-term evaluation	Provide a time to evaluate the intern on their performance at the end of the internship experience. Provide feedback and suggestion for improvement

(3) A third function is to obtain continuing education credit for maintaining a professional credential.

(4) A fourth function is to reduce your registration costs for a professional conference event. Often conferences will give a discount or free registration to a presenter.

(5) A fifth function of professional presentations is to help to build your portfolio or curriculum vita as a horticultural therapy professional. This can be important as a faculty member or when applying for new employment opportunities.

The UTG staff have presented at numerous regional and national conferences throughout the United States and internationally over the past 10 years. One important element of developing a professional presentation is to follow the conference or organization guidelines that are presented in their Request for Proposals. Failure to follow the structure and content outlines will result in denial of your presentation proposal.

Research

Horticultural therapy has a need for randomized controlled studies to help document the impact of the interventions. Being connected to a university is a valuable asset to the UTG Horticultural Therapy program. It provides opportunities to connect with other researchers and faculty, as well as mentor students who want to learn more about research and scientific writing.

Wellness

Being part of the University of Tennessee provides opportunities for UTG Horticultural Therapy program staff to connect and work with undergraduate and graduate students on research projects. One project that was initiated during 2022 was a research project on the impact of a wellness program focusing

on horticultural therapy and Eco wellness. This project was developed by a graduate student from the Department of Psychology. Results from this project are being evaluated and publication of the results will be coming in 2023.

Veterans

In 2017, the UTG received a grant to support the creation of a horticultural therapy program focused on serving veterans. This program was funded through a Phase 1 grant of \$15 000 U.S. dollars. These funds were used to develop a pilot program. The first part of the grant was to review the current evidence-based practice related to veterans and horticultural therapy. Research articles were explored and two site visits were made to review how the Chicago Botanical Garden (n.d.) and Talmar (n.d.) facilitated their horticultural therapy programs focused on veterans. This project sought out approval from UT's Institutional Review Board to conduct a research study on the impact of the program. Results from this project found positive benefits of utilizing horticultural therapy^[16]. Additional work related to horticultural therapy and veterans has been conducted at the UTG, including workshops as part of a collaboration with Tennessee AgrAbility Project^[17].

Outreach

Outreach gives the opportunity for researchers to take results from their studies and offer programs to community members. Outreach is the connection of university resources to community members. This also helps to illustrate the value of the University and its funding from the State of Tennessee. It gives concrete examples of how the work being done at the University can provide positive outcomes to citizens. The UTG provides three main outreach efforts. Outreach programs of the UTG are funded through grants, program fees, and donations.

Mobile Garden Program

In 2012, the UTG began offering horticultural therapy programing to assisted living facilities. At first, the facility would bring residents or program participants to the UTG. Initial evaluations of the program found that the limitations of time, staffing and resources of assisted living facilities made travel to the UTG challenging. Staff developed the concept of a mobile garden program to be able to reach more facilities throughout the East Tennessee region. Assisted living facilities are group living facilities that provide services including activities of daily living and medication administration for older adults^[18]. Several of the programs the UTG works with also provide memory care services for individuals who have been diagnosed with dementia or Alzheimer's. The mobile garden programs provide opportunities for meeting therapeutic goals such as social interaction, maintenance or improvement of gross and fine motor skills, horticulture education to name a few. The program includes a foldable wagon, garden potting trays, trowels, gloves, soil, and specific plan materials based on each session's needs. Staff connect with activity directors to develop the program and incorporate garden beds if the facilities have them. The mobile garden program also works with other groups such as local schools. In 2020, we began offering horticultural therapy programs to a local elementary school special education program.

Vocational Training

Vocational training for individuals with disabilities has been a focus of horticultural therapy throughout the development of the profession^[19]. Melwood was one of the leaders in developing horticultural therapy programs for people with disabilities^[20]. The AHTA collaborated with numerous organizations throughout the United States on a project called Horticulture Hiring People with Disabilities (HHPD), which focused

on vocational training for people with disabilities^[21]. Although the funding for AHTA's program ended, there are numerous programs around the country that focus on vocational training for people with disabilities using horticulture. The program at the UTG has worked with high school students who are part of the Comprehensive Adult Program at Tennessee School for the Deaf. The program focuses on teaching both horticulture skills to work in a greenhouse or public garden, and connects those skills to vocational skills. We also work with the University of Tennessee FUTURE program that services adults with intellectual and developmental disabilities. The FUTURE program places student interns to gain skills focused on helping the students gain employment after completing their program^[22].

Community Based Rehabilitation

In 2021, the UTG received an opportunity to collaborate with the Caribbean Community Based Rehabilitation Network (CCBRN) to conduct a needs assessment. This program was a collaboration between the United States Agency on International Development and Partners of the Americas Farmer to Farmer program. The needs assessment was to determine if introducing horticultural therapy would be a valuable addition to the network's community-based rehabilitation programs. Results from the needs assessment were positive and illustrated interest and a willingness to add horticultural therapy to the agencies who are part of the CCBRN. The UTG continued to work with the CCBRN to develop and implement several training programs focused on training program leaders on horticultural therapy program development.

Results and Discussion

Since its creation in 2012, the horticultural therapy program has served 8 495 participants, 2 508 healthcare professionals, 17 recreational therapy

interns, and five horticultural therapy interns. The success of the program has continued, and future program development includes exploring collaborations for research and program implementation. The most important aspect of implementing a horticulture therapy program at a public garden or university is to collaborate. Collaboration includes working with other professionals and researchers to attain a common goal. Collaborations with community organizations help to increase impact throughout the region. Collaborating with researchers helps provide opportunities for conducting scholarly work and expanding the awareness of horticultural therapy to other researchers and professions. Funding is a challenge for developing and implementing horticultural therapy programs. Without insurance reimbursement, horticultural therapy must rely on private pay, donations, or grants to support the work. The university provides an opportunity to explore horticultural therapy and provide outcomes and proof of concept about the value of the interventions. This can in turn lead to further program expansion to the private sector.

There is a strong need to conduct additional research that includes larger sample sizes and randomized controlled study designs. This will help generalize the impacts of horticultural therapy to the general populations. Additional research topics need to look at cost-benefit analysis of horticultural therapy and determine if implementing programs can reduce overall healthcare costs. 